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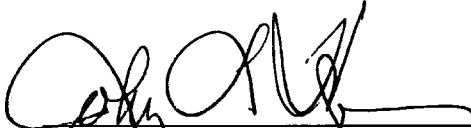
**Weather Surveillance Radar - 1988 Doppler
(WSR-88D)
Integrated Logistics Support Plan**

WSR-88D Integrated Logistics Support Plan
R400-IS301C
15 March 2002

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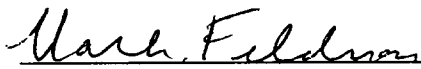


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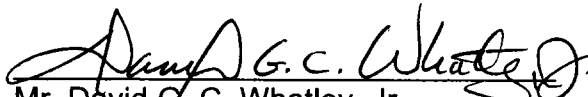


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1. INTRODUCTION

1.1 Overview

The Weather Surveillance Radar - 1988 Doppler (WSR-88D) program is a joint effort of the Department of Commerce (DOC), the Department of Defense (DOD), and the Department of Transportation (DOT). The operational user agencies involved are the DOC's National Weather Service (NWS), the DOD's United States Air Force (USAF) and Naval Meteorological and Oceanography Command (NMOC), and the DOT's Federal Aviation Administration (FAA). The program has deployed 158 operational and 8 non-operational (training, test, and repair) WSR-88D weather radar systems throughout the United States and at selected overseas locations.

For the design and acquisition phase of the WSR-88D system, a Joint System Acquisition Office (JSAO) was assigned program management responsibility under the DOC, with coordination of the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM). The WSR-88D Responsibility Transfer Plan defined the criteria for orderly transfer of support management and program management from the JSAO to the joint WSR-88D Radar Operations Center (ROC) (W/OPS4) and the NWS Office of Operational Systems (W/OPS), respectively. Support Management Responsibility Transfer (SMRT) and the WSR-88D Program Management Responsibility Transfer (PMRT) occurred in 1997. The WSR-88D System is now in the operational phase of its life cycle. The Next Generation Weather Radar (NEXRAD) Product Improvement (NPI) and other sustaining engineering modification projects approved by the WSR-88D Program Management Committee (PMC) continue to provide state-of-the-art technology insertion.

1.1.1 Purpose

The Integrated Logistics Support Plan (ILSP) identifies organizational relationships and responsibilities and describes the basis for agreements among various agencies for the management and technical support of the WSR-88D Program through the operational phase of the system life cycle. The plan identifies support activities to be accomplished, and references how, when, and by whom they will be accomplished. The ILSP includes detailed information for site personnel on the items which will be removed and replaced by special depot level teams, the recommended on-site spares, support equipment, and consumables.

1.1.2 Program Summary

The WSR-88D program provides a major upgrade to weather detection capabilities to collect and interpret vital weather data, to detect and identify weather events, and to issue warnings and distribute other critical information on such events. It accomplishes this task by integrating advanced Doppler radar capabilities, real-time signal processing techniques, advanced meteorological/hydrological algorithms, and automated product

processing, distribution, and display technologies into a unique WSR-88D Doppler weather radar system. To support this national effort, radar hardware and software system capabilities vital to effective severe weather and flood warning and to water resource management, must be effectively maintained and enhanced as new requirements and technologies are identified.

1.2 Applicability

1.2.1 Background

In order to meet agency goals and mission responsibilities, the DOC, DOD, and DOT require similar information concerning the location, development, and movement of hazardous weather activity detectable by radar. In response to this need, these three departments developed a common WSR-88D system with the WSR-88D JSAO assigned responsibility for system acquisition and deployment. The technical, operational and integrated logistics support concepts developed during the WSR-88D Validation Phase indicated a need for continuation of a joint centralized, common support effort during the operational phase of the system life cycle. WSR-88D life cycle costs, system reliability, network integration, and future technological advancements were some considerations which formed the basis for agency agreements for operation and support of the system through a joint, tri-agency ROC. Consequently, actions were taken to define and establish the WSR-88D ROC as an organization of the NWS (W/OPS4) operating under the authority of the WSR-88D Program Management Committee (PMC). Major responsibilities of the ROC are sustaining operational life cycle operations in the areas of: centralized software/algorithm development and maintenance, engineering management, configuration management, modification development and deployment, technical documentation management, and on-site depot maintenance for all WSR-88D radar systems belonging to the three departments. Supply support management and centralized depot repair are the responsibilities of W/OPS Maintenance, Logistics, and Acquisition Division (W/OPS1). The NWS Office of Science and Technology (W/OST) Program Plans Division (PPD) and Systems Engineering Center (SEC) are responsible for managing and engineering NPI projects for changes that affect WSR-88D system architecture and are approved by the PMC. Multi-agency and/or multi-organizational project teams may be formed to address both NPI and sustaining engineering projects.

1.2.2 Scope

This plan describes the integrated logistics support of the WSR-88D system during its operational life cycle. Included in the plan are the roles, responsibilities, and functional support task areas for the DOC, DOD, DOT, and the ROC to provide overall program management and oversight.

1.2.3 Program Management Responsibility

The WSR-88D Program Management Committee was formally established on January 14, 1993, by signature approval of the original Terms of Reference by the members of the NEXRAD Program Council (NPC). The NPC formally retired on November 17, 1997, after granting the PMC overall authority for the WSR-88D program. The WSR-88D PMC, a tri-agency organization, provides oversight of the WSR-88D program budget, policy, resource commitment, and management guidance throughout the life cycle of the WSR-88D program to ensure that both common and unique agency requirements are addressed and resolved. The day-to-day operations and management of the WSR-88D Program are directed from the tri-agency ROC with the WSR-88D ROC Director (W/OPS4) organizationally reporting to the Director of the NWS Office of Operational Systems (W/OPS) and serving the WSR-88D PMC as the WSR-88D Integration Program Manager. The Director of W/OPS serves as the Chairman of the PMC.

1.3 References

The following listed documents serve as reference to this ILSP:

Federal Meteorological Handbook 11 (FMH-11), Doppler Meteorological Radar Observations, OFCM, (Part A released March 1991, Part B released November 1989, Part C released November 1990, and Part D released April 1992)

NEXRAD Maintenance Concept, RG400-MC202, February 1984

WSR-88D Configuration Management Plan, ROC-PLN-PGM-03, 7 July 1996

WSR-88D Configuration Control Board Charter, OSFPLN-SSB-06, April 12, 2000

Management Process for WSR-88D Modifications, ROCPLN-PGM-02 REV1 (Draft), 12 September 2001

WSR-88D Responsibility Transfer Plan, Version 3.4, 3 March 1993, and associated Transfer Agreements, 20 June 1994

WSR-88D Program Management Committee Charter, February 14, 2001

Memorandum of Agreement (MOA) among DOC, DOT and DOD for Allocation of Program Costs in Operational Phase of WSR-88D Program, 12 May 1997

Memorandum of Agreement (MOA) among DOC, DOT and DOD for Interagency Operation of the WSR-88D, February 14, 2001

WSR-88D Technical Manual Maintenance Plan, 15 August 1994

1.4 WSR-88D System Description

The compilation of WSR-88D systems includes 158 operational Doppler radar sites consisting of a Radar Data Acquisition function, a Radar Product Generator function, one or more Principal User functions, and support including communications functions, facilities functions, and the integrated logistics support functions addressed by this plan. The WSR-88D Principal User Processor (PUP) function is being replaced by Agency unique Principal User systems such as the NWS Advanced Weather Interactive Processor System (AWIPS), the FAA Weather and Radar Processor (WARP), and the DOD Open Principal User Processor (OPUP). Integrated Logistics Support of these agency unique Principal User functions is external to the WSR-88D System. After each agency completes deactivation of its WSR-88D PUPs through the WSR-88D CM process, the WSR-88D PUP will no longer be supported and the support for the agency unique replacements will be provided for by each agency.

Operational WSR-88D systems may be employed as network, supplemental, or non-network sites, as defined in the FMH-11 (Part A). The basic policies for the operation and support of the WSR-88D systems to meet the common needs of the WSR-88D agencies are stated in the Memorandum of Agreement (MOA) among DOC, DOT and DOD for Interagency Operation of the WSR-88D, 14 February 14, 2001 and the Memorandum of Understanding (MOU) among DOC, DOT and DOD for Joint Interagency Integrated Support of the WSR-88D. The latter is provided as Appendix B of this ILSP.

1.4.1 Radar Data Acquisition

The Radar Data Acquisition (RDA) function includes the Doppler radar, tower, and radome which are located at the radar site. It includes hardware and software required for transmitting, receiving, signal processing, control, status monitoring, error detection, display, calibration, and archiving functions related to the radar's operation.

1.4.2 Radar Product Generator

The Radar Product Generator (RPG) function includes data processing, data entry, and display capabilities located at either the radar or principal user site. It includes all hardware and software required for real-time generation, storage, and distribution of meteorological and hydrological products required for operational use. It also includes hardware and software required for control, status monitoring, error detection, and archiving. To the extent required, it includes some display and data entry hardware and software to provide for human interaction in the generation and distribution of products.

1.4.3 Principal User Processor

The PUP function includes data processing, data entry, and display capabilities located at the principal user site. It includes all hardware and software required for request,

display, storage, annotation, local control, status monitoring, error detection, archiving, and limited product distribution. The WSR-88D Principal User Processor (PUP) function has been replaced by Agency unique Principal User systems such as the NWS Advanced Weather Interactive Processor System (AWIPS), the FAA Weather and Radar Processor (WARP), and the DOD Open Principal User Processor (OPUP). After each agency completes deactivation of its WSR-88D PUPs through the WSR-88D CM process, the WSR-88D PUP will no longer be supported and the support for the agency unique replacements will be provided for by each agency.

1.4.4 Communications

The communications function includes modems and circuits for narrowband data communications and transmission facilities for wide band communications. It includes the hardware and software required at WSR-88D sites and inter-site narrowband; e.g., communication circuits required to transmit and receive weather products and status and control information on a dedicated or dial-up basis. It also includes the hardware and software required at the WSR-88D radar and principal user site, and intra-site transmission facilities required to transmit and receive radar base data.

1.4.5 Facilities

The facilities function includes real estate, buildings, and provision and installation of Real Property Installed Equipment (RPIE) such as power generation, air conditioning equipment, uninterruptible power systems, and access roads which are needed in support of the WSR-88D system. Each agency is responsible for its own facilities management in support of the WSR-88D program.

2. AGENCY, DEPOT AND USER RESPONSIBILITIES

2.1 General

This section of the ILSP identifies the organizations of the participating agencies involved in WSR-88D operations and maintenance, delineates their organizational relationships, and specifies responsibilities for the management and support of the WSR-88D resources and functions throughout the system's operational life cycle. A synopsis of major responsibilities is contained in Table 2.1.

2.2 Program Management Committee

The WSR-88D Program Management Committee was formally established on January 14, 1993, by signature approval of the original Terms of Reference by the members of the NEXRAD Program Council (NPC). The NPC formally retired on November 17, 1997, after granting the PMC overall authority for the WSR-88D program. The PMC is guided by the WSR-88D PMC Charter approved on February 14, 2001. The PMC provides overall tri-agency policy, management guidance, budget, agreements, and decisions involving changes, modifications, new work, and resource commitments for the WSR-88D program during its operational life cycle. The primary role of committee members is to make higher authority decisions for each agency throughout the operational life of the WSR-88D equipment with focus on major product improvements and network performance. The PMC acts as the final arbiter on major policy and financial issues involving the WSR-88D program.

The PMC is chaired by the Director of NWS Office of Operational Systems who as a non-voting member presides over all meetings of the PMC, arranges for the presentation of issues, and obtains all resolutions. The PMC Chair receives plans, issues, interagency Memoranda of Agreement (MOA), plans and charters for consideration by the PMC. The PMC Chair receives Engineering Change Proposals (ECP) from the WSR-88D Configuration Control Board (CCB) for consideration by the PMC. The PMC Chair refers unresolved issues to Agency Executive Levels for resolution.

Non-voting PMC operational support representation is provided by the Chief of ROC as the WSR-88D Integration Program Manager (IPM). The IPM provides technical support, operations issues advice, and status information on approved sustaining engineering changes and testing to the PMC. The IPM participates in the prioritization of new approved changes. The IPM monitors and reports to the PMC on WSR-88D network performance.

NEXRAD Product Improvement (NPI) representation is provided by the Chief of the Programs and Plans Division of the NWS Office of Science and Technology, who as a non-voting member of the PMC is the WSR-88D NPI Manager. The NPI Manager proposes project baselines in terms of cost, schedule, and scope defining the product

and cost benefit as the advocate for NPI. Once PMC approval for a NPI project is received, the NPI Program Manager manages the approved project within the PMC approved baseline cost, schedule, and scope and briefs the status of NPI projects to the PMC.

The NWS Office of Climate, Water and Weather Services, Operations and Requirements Division, Requirements/Change Management Branch (W/OS12) as a non-voting member of the PMC, provides the Executive Secretary to the PMC. The Secretary performs routine secretariat functions, assists the PMC Chair, and maintains the administrative management process of the PMC, i.e. member lists, meeting scheduling, agenda, minutes, etc.

Agency Representatives are the voting members of the PMC and are delegated full authority to act as Executive Agents for their respective agencies. The Agency Representatives present agency issues to the PMC. They review PMC meeting agenda and attend PMC meetings prepared to address and resolve each item on the agenda. The Agency Representative ensures appropriate coordination occurs to obtain agency approval to commit resources for WSR-88D support. Voting Agency Representatives of the PMC are: Director of the Office of Science and Technology, NWS; Director of Plans and Programs, Headquarters Air Force Weather Agency (AFWA); Program Director for Aviation Weather, Headquarters FAA.

2.3 Department of Commerce, National Weather Service

2.3.1 Office of Science and Technology

The NWS Office of Science and Technology will provide the Agency Representative who is the NWS voting member of the PMC and who is delegated full authority to act as Executive Agent for DOC. W/OST will initiate and manage NPI projects approved for implementation by the tri-agency WSR-88D PMC. These projects encompass changes which affect the WSR-88D system architecture.

2.3.1.1 Program and Plans Division

W/OST1, Program and Plans Division, provides non-voting PMC representation as the NPI Manager. W/OST1 defines and plans science and technology road maps for service improvements and leads NWS technology improvements to the WSR-88D System. W/OST1 provides program planning, execution, and tracking of NPI projects; proposes NPI projects in terms of cost, schedule, and scope; and briefs the status of NPI projects to the PMC and other organizations.

For NPI projects approved by the PMC, W/OST1 manages approved costs, schedule, and scope defining the product and cost benefits.

2.3.1.2 Systems Engineering Center

W/OST3, Systems Engineering Center plans WSR-88D system evolution consistent with the NWS information technology structure. They analyze requirements and solutions for cost benefit and operational feasibility. W/OST3 directs development and integration of enhancements to and new technology for communications, hardware, and software infrastructure.

W/OST3, Systems Engineering Center will:

- a. Provide Systems Engineering for NPI projects
- b. Develop software for NPI and Sustaining Engineering projects
- c. Provides integration and testing of NPI projects
- d. Provide supply support planning and implementation for NPI projects.
- e. Provide supply equipment planning and implementation for NPI projects.
- f. Provide retrofit planning, modification kit procurement, and implementation for NPI projects.
- g. Provide safety planning and implementation for NPI projects.
- h. Provide field and depot maintenance support planning and implementation for NPI projects.
- i. Provide depot repair planning and implementation for NPI projects.
- j. Provide facilities planning and implementation for NPI projects.
- k. Provide Configuration Management planning and implementation for NPI projects.
- l. Provide Operations and Maintenance Technical Manual planning and implementation for NPI projects.
- m. Provide Engineering Data including specifications and drawing planning and implementation for NPI projects
- n. Perform Independent Verification and Validation of NPI projects

2.3.2 Office of Operational Systems

The Office of Operational Systems (W/OPS) will Chair the PMC and provide the non-voting PMC WSR-88D Integration Program Manager. W/OPS will operate and maintain all NWS-owned WSR-88D equipment. In addition, NWS through the W/OPS will:

- a. Provide program management responsibility for WSR-88D operational support as detailed in the WSR-88D Responsibility Transfer Plan and the WSR-88D PMC Charter.
- b. Prepare program plans and documentation.
- c. Provide support for NWS WSR-88D site surveys, site modifications, and site acceptance of WSR-88D equipment.
- d. Provide a NWS representative to tri-agency working groups and teams.
- e. Plan, budget and provide staff to the ROC. Manage and operate the ROC by implementing coordinated tri-agency plans, policies, budget, and staffing. Plan, program, and budget costs for tri-agency and agency unique integrated logistics support elements including the maintenance, spares, peculiar support equipment and repairs of the NWS portion of the WSR-88D systems at the site (by special teams, contractors, or on-site personnel) and at the repair depot.
- f. At the ROC, provide tri-agency WSR-88D hardware and software configuration management, hardware sustaining engineering design, software and algorithm maintenance, software release, sustaining engineering modification development/procurement/deployment, engineering and technical data development and maintenance. The ROC will additionally coordinate support requirements for fielded systems including field support and on-site depot level maintenance. The ROC will manage near-term technical data transfer activities, and long-term system improvement work.

**TABLE 2.1 MAJOR RESPONSIBILITIES SYNOPSIS
FOR WSR-88D OPERATIONAL LIFE CYCLE**

Program Management

Program Management Responsibility	W/OPS
Interagency Management Coordination	W/OPS
Interagency Technical Coordination	ROC
Tri-agency Budget Coordination	W/OPS

Configuration Management

Agency PMC/CCB Coordination	ROC
Hardware/Software Configuration Management	ROC
Site-level Configuration Status Accounting	W/OPS1
Communications Configuration Management	Agency/ ROC

Engineering/Technical Support

Maintenance Data Collection	W/OPS1
Maintenance Data Analysis	ROC/W/OPS1
Software Maintenance/Enhancement	ROC
Adaptable Parameters/Background Maps	ROC
Technical/Engineering Documentation.	ROC
Modification/Retrofit Planning, Procurement, Deployment	ROC
Engineering, NEXRAD Product Improvement	W/OST SEC
Engineering, Sustaining	ROC
Integration Testing	W/OST SEC/ROC
Frequency Management	Agency/ROC

Field Support

On-Site Depot Team Corrective/Preventive Maintenance	ROC
Hotline Field Support	ROC
Replenishment Supply/PICA	W/OPS1
Depot Repair and/or Reconditioning	NRC
Quality Control of Depot Repairs	NRC
Quality Assurance of New Supply Spares	NRC
Organizational Level Corrective/Preventive Maintenance	Agency/Site
System Calibration	Agency/Site
Test Equipment Repair and Calibration	Agency/Site/NRC
Formal Maintenance Training	NWSTC/AETC
Formal Operations Training	NWSTC/AETC
Network Management	ROC
Tri-agency Operational Support	ROC
Communications Access Management	ROC
Operations	Agency

Note: The following abbreviations are used in this table:

NRC = National Reconditioning Center (W/OPS1)
W/OPS = NWS Office of Operational Systems
W/OPS1 = W/OPS, Maintenance, Logistics, and Acquisition Division
ROC = WSR-88D Radar Operations Center (W/OPS4)
NWSTC = National Weather Service Training Center (W/OS6)
AETC = Air Education Training Command
W/OST SEC = NWS Office of Science and Technology, Systems Engineering Center
Agency = NWS, FAA, AFWA

- g. Plan and budget for operation, maintenance, and sustaining engineering modification improvements to the WSR-88D system.
- h. Procure and provide to NWS sites all WSR-88D Common Support Equipment (CSE) requirements. Provide calibration for all NWS CSE and Peculiar Support Equipment (PSE).
- i. Provide direction to the NWS regions and maintain liaison with other agencies in the effective maintenance of required meteorological and hydrological data collection, dissemination and exchange.
- j. Serve as the Primary Inventory Control Activity (PICA) to control and replenish spare parts inventory and provide supply support for all three agencies. Ensure that Line Replaceable Units (LRUs) are returned to the NRC in a timely manner, and coordinate and obtain approval from W/OPS14 for requisitions for LRUs for which no unserviceable LRU return to the NRC is planned.
- k. Plan for and provide centralized depot-level repair support for all NWS, Air Force, Navy, and FAA equipment at the National Reconditioning Center in accordance with the procedures contained in Appendix D of this plan.
- l. Respond to requests for data and audits to help the ROC maintain network configuration control of WSR-88D and the individual site configuration database.

2.3.3 National Weather Service Training Center (NWSTC)

The NWSTC shall be responsible for development, implementation, conduct, and monitoring of formal technical training required to qualify maintenance and operations personnel on WSR-88D equipment throughout the WSR-88D life cycle.

2.4 Department of Defense

DOD will operate and maintain all DOD-owned WSR-88D equipment.

2.4.1 Air Force Weather Agency (AFWA)

AFWA will provide the Agency Representative who is the DOD voting member of the PMC and who is delegated full authority to act as Executive Agent for DOD. AFWA will provide DOD program management support based on lead command responsibilities as identified in Air Force Policy Directive (AFPD) 10-9, while ensuring the operation and maintenance of all DOD-owned WSR-88D equipment. In addition, the AFWA will:

- a. Assist in the preparation of program plans and documentation.
- b. Provide local support for Base Weather Station site surveys and modifications

and for acceptance of WSR-88D equipment.

- c. Provide a DOD representative to tri-agency working groups and teams.
- d. Plan, budget and provide staff to the ROC. Provide the Deputy Director of the ROC. Plan, program, and budget costs for tri-agency and agency unique operation, modification improvements, and integrated logistics support elements including the maintenance, spares, and repairs of the DOD portion of the WSR-88D systems at the site (by special teams, contractors, or on-site personnel) and at the repair depot.
- e. Provide all WSR-88D CSE requirements to DOD sites.
- f. Provide direction to the DOD commands. Maintain liaison with other agencies in the effective maintenance of required meteorological and hydrological data collection, dissemination and exchange.
- g. Respond to requests for data and audits to help the ROC maintain nationwide configuration control of WSR-88D and to keep the site configuration database current.
- h. Provide operations training requirements to the Air Education Training Command (AETC).

2.4.2 Air Force Communications Agency (AFCA)

The Headquarters (HQ) AFCA is responsible for coordinating with AFWA and participating commands on inputs when tasked or required. In addition, AFCA will:

- a. Assist in the policy and procedures for WSR-88D support.
- b. Provide a representative to tri-agency working groups and teams where DOD logistics and maintenance issues are discussed.

2.4.3 Air Force Material Command (AFMC)

AFMC will:

- a. Establish a Secondary Inventory Control Activity (SICA) to interface with the PICA's logistics systems.
- b. Support any USAF conducted Operational Test and Evaluation program as necessary in accordance with Air Force Instruction (AFI) 99-102.
- c. Plan to provide calibration and Precision Measurement Equipment Laboratory

(PMEL) support for Air Force WSR-88D systems and ensure that systems and equipment meet the metrology and calibration requirements in accordance with AFI 21-113 which establishes and directs the metrology and calibration program and Technical Order (T.O.) 00-20-14 which provides methodology and procedures to carry out the direction of AFI 21-113.

- d. Coordinate with the supporting agency to ensure the WSR-88D system is supported according to approved MOA and established WSR-88D support procedures of DOD, DOC, and DOT.
- e. Participate in test acceptance in accordance with WSR-88D Site Acceptance Plan and commissioning in accordance with AFI 33-104.
- f. Plan and perform site surveys for the Air Force portion of the WSR-88D system.
- g. Plan and provide communications between WSR-88D RPG sites and the Air Force owned WSR-88D PUP sites.

2.4.3.1 Ogden Air Logistics Center (OO-ALC)

OO-ALC will perform SICA responsibilities for the Air Force. In addition, OO-ALC will:

- a. Plan, program, budget, and fund for spares and depot support of Air Force owned components as required by MOA with the supporting agency, NWS.
- b. Provide a representative to tri-agency working groups and teams where DOD logistics, maintenance, and configuration issues are discussed.
- c. Provide customer liaison and feedback to the AFWA for DOD maintainers and supply points to ensure effective support of WSR-88D equipment. Ensure all customers are informed that they can utilize the NWS CLS "read only" terminal connection at internet address <http://www.casc.noaa.gov/nlsc> (<http://206.229.210.157/>) to inquire about stock availability and the status of requisitions.
- d. Provide assistance in Technical Manual development.

2.4.3.2 Other Air Logistics Centers

The other affected Air Logistics Centers will budget for and procure any required common support equipment.

2.4.4 Participating Commands

The participating commands will operate Air Force-owned WSR-88D equipment. In

support of operations and maintenance the participating commands will:

- a. When tasked or required, support AFWA in coordinating policy and procedures.
- b. Upon request, provide inputs to various logistics documents (maintenance concept, ILSP and others).
- c. Provide qualified personnel to support logistics and program activities (technical order verification, provisioning, audits and others) upon request.
- d. Assist in support of site surveys, installation requirements and the commissioning of systems at command sites.
- e. Provide maintenance training requirements to HQ AETC.
- f. Respond to requests for data and audits to help the ROC maintain nationwide configuration control of WSR-88D and to keep the site configuration database current.
- g. Provide timely and adequate maintenance information to assist the ROC with the correction of malfunctions and engineering design deficiencies.
- h. Budget and fund command spares replenishment and CSE. Ensure that LRUs are returned to the NRC in a timely manner, and coordinate and obtain approval from W/OPS14 for requisitions for LRUs for which no unserviceable LRU return to the NRC is planned.

2.4.5 Air Education Training Command (AETC)

The AETC is responsible for the development, implementation, conduct, and monitoring of formal operations and maintenance technical training courses required to train Air Force, Navy, and Marine Corps personnel to test, evaluate, operate and maintain WSR-88D equipment throughout the system life cycle.

2.4.6 Naval Meteorological and Oceanography Command (NMOC)

The NMOC will:

- a. Coordinate the planning for the operation of Navy-owned WSR-88D equipment.
- b. Submit training requirements to Chief of Naval Education and Training (CNET).
- c. Fund for recurring communication costs.

2.4.7 Chief of Naval Education and Training (CNET)

CNET will provide Navy training requirements to AETC.

2.4.8 Space and Naval Warfare Systems Command (SPAWAR)

SPAWAR will be the WSR-88D Program Manager for Navy and Marine Corps equipment and will through the DOD AFWA:

- a. Assist in the preparation of program plans and documentation.
- b. Provide local support for site surveys, modifications and/or other assistance for acceptance of WSR-88D equipment.
- c. Provide a representative to tri-agency working groups and teams.
- d. Ensure all Navy/Marine Corps users are advised of the need to budget for operation, maintenance, and modification improvements to the WSR-88D system.
- e. Provide all WSR-88D CSE requirements to Navy/Marine Corps sites.
- f. Plan, program, and budget costs for tri-agency and agency unique integrated logistics support elements including the maintenance, spares, and repairs of the NWS portion of the WSR-88D systems at the site (by special teams, contractors, or on-site personnel) and at the repair depot.
- g. Provide direction to the Navy/Marine Corps commands and maintain liaison with other agencies in the operation and effective maintenance of required meteorological and hydrological data collection, dissemination and exchange.
- h. Respond to requests for data and audits to help the ROC maintain nationwide configuration control of WSR-88D and to keep the site configuration database current.

2.4.9 Navy Inventory Control Point (NAVICP)

NAVICP will perform SICA responsibilities for the Navy/Marine Corps. In addition, NAVICP will:

- a. Budget throughout the WSR-88D life-cycle for depot repairs of Navy/Marine Corps WSR-88D equipment.
- b. Provide a Navy/Marine Corps representative to tri-agency working groups and teams where Navy/Marine Corps logistics issues are discussed.

- c. Provide customer liaison and feedback to the SPAWAR WSR-88D Program Office for Navy/Marine Corps maintainers and supply points to ensure effective support of WSR-88D equipment.

2.4.10 Navy/Marine Corps Users

Plan, program, and budget for the operation and maintenance of Navy/Marine Corps-owned WSR-88D equipment.

2.5 Department of Transportation

DOT/FAA will operate and maintain all DOT-owned WSR-88D equipment.

2.5.1 Federal Aviation Administration

FAA Headquarters, Aviation Weather Program will provide the Agency Representative who is the FAA voting member of the PMC and who is delegated full authority to act as Executive Agent for DOT. The FAA is responsible for the operation and maintenance of all FAA-owned and operated WSR-88D equipment. In addition, the FAA will:

- a. Assist in the preparation of program plans and documentation.
- b. Provide local support for FAA site surveys and modifications and for acceptance of WSR-88D equipment.
- c. Provide a FAA representative to tri-agency working groups and teams.
- d. Plan, budget and provide staff to the ROC.
- e. Plan and budget for operation, maintenance, and modification improvements to the WSR-88D system.
- f. Procure and provide to FAA sites all required WSR-88D CSE. Provide calibration and repair of all FAA site test equipment.
- g. Plan, program, and budget costs for tri-agency and agency unique integrated logistics support elements including the maintenance, spares, and repairs of the NWS portion of the WSR-88D systems at the site (by special teams, contractors, or on-site personnel) and at the repair depot. Ensure that LRUs are returned to the NRC in a timely manner, and coordinate and obtain approval from W/OPS14 for requisitions for LRUs for which no unserviceable LRU return to the NRC is planned.
- h. Provide guidance and authorizing documentation to the FAA regions and sites and maintain liaison with other agencies in the operation and effective

maintenance of required meteorological and hydrological data collection, dissemination and exchange.

- i. Respond to requests for data and audits to help the ROC maintain nationwide configuration control of WSR-88D and to keep the site configuration database current.
- j. Provide operations and maintenance training requirements to the NWS Training Center.
- k. Perform SICA responsibilities for the FAA.
- l. Provide customer liaison and feedback to the FAA maintainers and supply points to ensure effective support of WSR-88D equipment

3. TASKS AND PLANS

The support function includes the WSR-88D system hardware, diagnostic/calibration software, organizational level maintenance, support equipment, depot repair and quality control, maintenance training, supply support, maintenance data collection, and ROC support functions including: on-site depot level preventive and corrective maintenance, peculiar support equipment, hardware/systems and software engineering, sustaining engineering enhancement/modification development, procurement and retrofit, technical and engineering documentation, hardware and software configuration management, operations and maintenance hotline support, operations training, meteorological algorithm development/modification, frequency management, adaptable parameters, background map development/update, and all levels of test and evaluation to support the WSR-88D systems. In addition, the support function includes: NRC management of quality control and depot repair including Bench Test Equipment, jigs, fixtures, and Automatic Test Equipment (ATE), and its test program sets designed to support depot-level maintenance for the WSR-88D; W/OPS 14 Primary Inventory Control Activity responsibilities for supply support; and W/OST responsibilities for NPI project management.

Table 3.1 provides a list of functional area responsibilities and organizational Points of Contact.

3.1 Maintenance Planning

3.1.1 Maintenance Concept

The NEXRAD Maintenance Concept, RG400-MC202, was approved by the tri-agencies in February 1984. It provides policy for the life cycle maintenance planning and maintenance of the WSR-88D system hardware. In summary, organizational or field maintenance will be the responsibility of each agency. The policy provides for removal and replacement of Line Replaceable Units (LRU) at the organizational level and repair of LRUs at a centralized depot maintenance facility. The maintenance policy further provides for a specialized, on-site depot level maintenance support provided by a centralized team for a select number of large, low failure or highly complex items.

3.1.2 Availability Requirements

As a stated requirement of the tri-agencies, the WSR-88D System shall have an Operational Availability (A_o) of at least 0.960 for system functions which are critical to the performance of the agencies' missions, and for redundant DOT WSR-88D Systems the A_o shall be 0.989 or higher. Operational availability is defined in the Maintenance Concept and in the WSR-88D System Specification (2810000) as total operating and standby time in hours divided by the total possible time (8,760 hours per system per year) which is the sum of operating time, standby time, preventive maintenance down time, corrective maintenance down time, logistics delay down time, and administrative

delay down time. To achieve the availability goal several assumptions are provided which relate to maintainability and reliability, namely: mean time to repair shall not exceed 30 minutes, average administrative response time shall not exceed 1 hour, a sparing level which ensures that a part is available 95 percent of the time when a failure occurs, logistics delay time shall not exceed 24 hours for the remaining 5 percent of parts required for corrective maintenance, and preventive maintenance which incurs down time shall not exceed a maximum of two hours per month.

Operational Availability (A_o) is an important measure of system effectiveness because it relates system hardware, support, and support characteristics into one meaningful parameter - a figure of merit depicting the system's state at the start of its mission. Because it is an effectiveness-related index, A_o or some tailored variation of it is used as a starting point for nearly all effectiveness analyses. The WSR-88D tri-agencies by agreement utilize a variation which excludes preventive maintenance down time called Service Availability (A_s) to measure WSR-88D operational performance. Service Availability goals are calculated for the WSR-88D as 0.962 for system functions which are critical to the performance of the agencies' missions, and for redundant DOT WSR-88D Systems the A_s shall be 0.992 or higher.

3.1.3 Field Support at the ROC

The ROC will support all three agencies, primarily by telephone through the WSR-88D Hotline 1-800-643-3363, in the resolution of field level hardware and software problems. Each agency may contact the ROC for maintenance, operational, and procedural assistance through slightly different procedures, as outlined below. The ROC will keep the appropriate agency POC informed of difficult or ongoing problems.

- a. NWS. If hardware, software, or operational problems cannot be corrected by the on-site personnel, they will normally first contact their regional headquarters. If ROC assistance is deemed necessary, then the field site will interface directly with the ROC.
- b. Air Force. When an Air Force field site has a problem it cannot resolve, the technician will attempt to call the Command Special Maintenance Team (SMT) for assistance. If the SMT is unavailable or the problem still persists, the site may then contact the ROC depending on the complexity of the problem and the direction from the major command headquarters.
- c. Navy/Marine Corps. When a Navy or Marine Corps field site has a problem that cannot be resolved locally, they will contact the WSR-88D PUP In Service Engineering Activity (ISEA) at SPAWARSYSCEN, Charleston, SC, code 344PK. If the ISEA is unavailable or the problem still persists, the site may then contact the ROC.
- d. FAA. When an FAA field site has a problem it can not resolve, the technician will

contact their sector/regional engineering office. Efforts to resolve problems shall be done at the lowest level before contacting AOS-250 and the WSR-88D Hotline. The technician will also notify AOS-250, either directly or via their appropriate sector or regional office, concerning any problem that was encountered that required assistance outside the local technician workforce. If further assistance is still required, the technician will contact AOS-250 for additional guidance.

The ROC will provide site depot level support to each site by arranging for appropriate contract or Government services. A listing of items for which depot team corrective maintenance is provided by the ROC is contained in Table 3.2. Depot team support may be requested by calling the WSR-88D Hotline at 1-800-643-3363.

3.1.4 Maintenance Data Collection

Management of maintenance data collection (MDC) and reporting is the responsibility of W/OPS13. The MDC will be used as a means for identifying reliability, maintainability, and availability problems and deficiencies through periodic management reports. The procedures and responsibilities are described below.

3.1.4.1 MDC Requirements and Responsibilities

- a. Each agency will develop a monthly summary of its WSR-88D systems' Service Availability (A_s) to include: system location, monthly downtime hours, monthly A_s calculation by site, and a list of sites logging more than 150 hours of downtime during the month; and provide it to W/OPS13. Monthly, W/OPS13 will compile the data into a report of tri-agency overall WSR-88D data and disseminate it to PMC members on a periodic or as-needed basis.
- b. Data associated with all agencies' repair times and travel times (maintainability) is represented by data unique to NWS systems. This type of data or data for other calculations using time data will be based solely on NWS Engineering Management Reporting System data as representative of all agencies.
- c. Data associated with failures will be calculated by each agency for its own use using its own maintenance data. Item specific information from National Reconditioning Center (NRC) depot maintenance data collection will be used for calculation of tri-agency Mean Time Between Failure, and any other tri-agency component failure calculations (reliability).

3.2 Workforce and Personnel

The WSR-88D system is maintained by personnel of the three agencies, and the skill levels of agency personnel vary. WSR-88D systems are maintained only by task-qualified technicians. Experience varies from several years experience to new

graduates of basic electronic and systems technical schools.

3.3 Supply Support

The W/OPS14, Logistics Branch provides PICA supply support for WSR-88D systems, and resolution of tri-agency supply problems. The process in place for supply support is provided as Appendix C of this plan.

As the PICA, W/OPS14 will establish and maintain an electronic requisition and status link (Federal Standard Requisitioning and Issue Procedures (FEDSTRIP); Military Standard Requisitioning and Issue Procedures (MILSTRIP) to accommodate current DOD and FAA requisitioning procedures and routing processes. Field personnel experiencing supply support problems will contact their normal Inventory Management Specialist; the SICA will in turn contact W/OPS14. NWS warehouse operations, under the supervision of W/OPS14, are located at National Oceanic and Atmospheric Administration (NOAA) Logistics Supply Center (NLSC), Kansas City, Missouri. Requirements for stock item replenishment are determined by W/OPS14 and executed through the procurement office of the NOAA Central Administrative Support Center. The tri-agency funding required to operate the warehouse will be acquired through the stock item unit price surcharge included on the funded FEDSTRIP/MILSTRIP requisitions or Consolidated Logistics System (CLS) requisitions submitted by the field users. W/OPS14 will provide the FAA and DOD with "read only" access to CLS for status monitoring of requisitions.

The agencies will ensure that all WSR-88D LRUs or other items which are coded as repairable are returned to NRC in accordance with the WSR-88D Supply Support Plan and the WSR-88D Depot Repair Support Plan. The agency/site will be charged full replacement cost for any LRU requisitioned. Credit will be issued when repairable items are returned to the NRC. If credit items are not returned within one hundred and eighty (180) days of the requisition ship date, restocking action will be initiated by W/OPS14, and the full issue price is charged. Special arrangements can be made by the agencies with W/OPS14 to extend the return time.

3.3.1 Site Recommended Spares

Site recommended spare parts were provided to each site based on each agency's assessment if its need to meet Operational Availability requirements after the time of system acceptance by the Government. As modifications are made to the WSR-88D system, it is the responsibility of each assigned project team to assess impact to the recommended on-site spares list and coordinate additions, changes, and deletions with W/OPS14 and the agencies. It is each site's responsibility to replace items used from their on site spares during corrective maintenance. The recommended site spares for the WSR-88D system are provided as Table 3.3, and the recommended site spares for the PUP are provided as Table 3.4. In addition to recommended spares, an initial supply of consumable items was provided to each WSR-88D system and PUP site.

These consumables are listed in Table 3.5 for the WSR-88D system and Table 3.6 for the PUP.

3.3.2 NWS Supply

NWS field personnel will follow the policies and procedures contained in NWS Engineering Handbook 1, Instrumental Equipment Catalog (Part 0), for obtaining needed WSR-88D replacement supply items; e.g., LRUs, piece parts, and consumables.

3.3.3 Air Force Supply

The Air Force field personnel will use the procedures contained in Appendix C of this plan for part requisitioning. Any item (LRU, piece part, etc.) required to make repairs to the equipment will be requisitioned through the host supply activity using established procedures set by Air Force directives and base supply, e.g., telephone, appropriate forms, computer terminals. Base supply will process a MILSTRIP requisition and make available the required part based on the requisition priority. The requisitions for repairable items will be automatically routed to the PICA through OO-ALC, the Air Force's SICA for WSR-88D. Requisitions for consumables will be routed directly to NWS or the Defense Logistics Agency (DLA).

All customers can utilize the NWS CLS "read only" terminal connection at internet address <http://www.casc.noaa.gov/nlsc> (<http://206.229.210.157/>) to inquire about stock availability and the status of requisitions.

3.3.4 Navy Supply

The Navy field personnel will use current procedures for requisitioning spares. Any item required to make repairs to the equipment will be requisitioned through the host supply activity. This requisitioning process will use established procedures set by base supply, e.g., telephone, appropriate forms, computer terminals. Base supply will process the requisition and make the required part available based on the requisition priority. Base Supply will enter the requisition on the MILSTRIP computer network. The requisition will be automatically routed to the PICA through NAVICP Mechanicsburg, the Navy's SICA. All customers may utilize the NWS CLS "read only" terminal connection at internet address <http://www.casc.noaa.gov/nlsc> (<http://206.229.210.157/>) to inquire about stock availability and the status of requisitions.

3.3.5 FAA Supply

The FAA Logistics Center as the SICA will be the centralized supply point for the FAA. The Logistics Center will process MILSTRIP requisitions to the PICA who will make available the required part based on the requisition priority. FAA field personnel will utilize existing FAA ordering procedures for ordering replacement items. The FAA Logistics Center will utilize the NWS CLS "read only" terminal connection at internet

address <http://www.casc.noaa.gov/nlsc> (<http://206.229.210.157/>) to inquire about stock availability and the status of requisitions.

3.4 Support Equipment

3.4.1 Purchase and Distribution

- a. NEXRAD PSE will be documented and approved by the tri-agencies through a Support Equipment Recommendation Data (SERD) prepared by the ROC. Approved PSE will be procured by ROC and distributed to WSR-88D sites through NLSC. PSE which fails will be returned to the NRC for repair, and replacement PSE will be requisitioned from the WSR-88D PICA using normal supply procedures. PSE approved for use on the WSR-88D is provided in Table 3.7.
- b. NEXRAD CSE will be documented and approved by the tri-agencies through a SERD prepared by the ROC. The SERD will recommend CSE. The decision as to which items are required by each agency (due to current agency inventories), the funding, procurement, distribution of CSE will be the responsibility of each agency. Replacement and repair of failed CSE is the responsibility of each agency. CSE documented by approved SERD for use on the WSR-88D is provided in Table 3.8.
- c. Certain items of Support Equipment (SE) due to frequency of use and/or high cost are shared by the agencies from limited quantities available at the NLSC. NEXRAD SHARED SE will be documented and approved by the tri-agencies through a SERD prepared by the ROC. Approved SHARED SE will be procured by ROC and stored at the NLSC. When a user site requires this support equipment, it is requisitioned as any other stock item, used by the site, and then returned to the NRC for checkout prior to being returned to the NLSC stock shelf. SHARED SE approved for use on the WSR-88D is provided in Table 3.9.

TABLE 3.1
FUNCTIONAL AREA RESPONSIBILITY/POINTS OF CONTACT

	TRI-AGENCY COORDINATION	DOC POC	DOD POC	DOT POC	TRI-AGENCY COMMITTEES & GROUPS
PLANS	ROC DIR	W/OST DIR	HQ AFWA	AOS-200	PMC/TAC
BUDGET		W/OPS DIR/ROC	HQ AFWA	AOS-200	PMC
SYSTEM CM	ROC CM	W/OS12	HQ AFWA	AOS-200	PMC/WSR-88D CCB/TRC
SITE CM	W/OPS13	W/OPS13	HQ AFWA	AOS-200	
SW MAINT/SUSTAINING ENG SW DEVELOP/NPI ENG	ROC ENG W/OST	ROC ENG W/OST	HQ AFWA HQ AFWA	AOS-200 AOS-200	SREC/APWG SREC/APWG
HDWR SUSTAINING ENG HDWR DEVELOP/NPI ENG	ROC ENG W/OST	ROC ENG W/OST	HQ AFWA HQ AFWA	AOS-200 AOS-200	ICWG
DOCUMENTATION	ROC PGM	W/OPS12	HQ AFWA	AOS-200	
FIELD MAINT DEPOT MAINT	ROC OPS NRC	W/OPS12 NRC	HQ ACC/SC OO-ALC	AML-400 AML-400	
SUPPLY SUPPORT	W/OPS14	W/OPS14	OO-ALC	AML-600	NLWG
FACILITIES	W/OPS15	W/OPS15	HQ AFWA	AND-400	
OPERATIONS TRNG MAINT TRNG	ROC OPS ROC OPS	NWSTC NWSTC	KEESLER AFB KEESLER AFB	NWSTC NWSTC	
MODIFICATIONS	ROC PGM	W/OPS1	HQ AFWA	AOS-200	
PECULIAR SE COMMON SE SHARED SE DEPOT SE	ROC PGM ROC PGM ROC PGM NRC	W/OPS12 W/OPS12 W/OPS12	HQ AFWA HQ AFWA HQ AFWA	REGION/SITE REGION/SITE REGION/SITE	
SAFETY	ROC PGM	ROC PGM	HQ AFWA	AOS-200	

TABLE 3.2
DEPOT TEAM CORRECTIVE MAINTENANCE ITEMS LIST

ASN	NSN	PART NUMBER	ITEM NAME	CAGE CODE	SMR
		171748X	FEED SUPPORT STRUT	84147	PAFZZ
11		MICROFLECT	STEEL TOWER	29189	PDFDD
12	5985-01-448-5950	8531-1	RADOME	15175	PDFDD
12MP10	5340-01-428-2260	8531-4	ZENITH HATCH ASSEMBLY	15175	PAFDD
12MP11	5985-01-441-8140	B1529-12-AZ	PANEL, AZIMUTH	15175	PAFZZ
12MP2	5985-01-411-5777	B1529-11-B1	PANEL, B1	15175	PAFZZ
12MP3	5985-01-411-5975	B1529-11-B2	PANEL, B2	15175	PAFZZ
12MP4	5985-01-411-5957	B1529-13-B1X	PANEL, B1X	15175	PAFZZ
12MP5	5985-01-411-5770	B1529-13-B2X	PANEL, B2X	15175	PAFZZ
12MP9	5985-01-411-5965	B1529-11-A	PANEL, A	15175	PAFZZ
12MS4	5920-01-381-3107	705-174-5	LIGHTNING ROD FOR 5 ROD ARRAY	15175	PAFZZ
12MS6	5920-01-448-9208	8552-74-1	LIGHTNING ROD SHAFT ASSEMBLY, 88 INCH	15175	PAFZZ
2		1214777	ANTENNA/PEDESTAL	56232	PDFDD
2		1219667	ANTENNA/PEDESTAL	56232	AD
2A1		40505-1001-102	PEDESTAL ASSEMBLY, REDUNDANT	26795	PBFDD
2A1	NWS9-90-200-0001	40505-1001-101	PEDESTAL ASSEMBLY, FSP	26795	PBFDD
2A1		54636-1001-101	PEDESTAL ASSEMBLY, LPP	26795	PBFDD
2A1A1		54636-1202-101	ELEVATION ASSEMBLY, LPP	26795	PBFDD
2A1A1		40505-1202-101	ELEVATION ASSEMBLY, FSP/REDUNDANT	26795	PBFDD
2A1A1A3A1	3010-01-436-0701	14636-5003-3	GEARBOX, ELEVATION	1M813	PAFLD
2A1A1A5	3120-01-388-2111	14636-5001-101 or 1222R2	BEARING, TURNTABLE, ELEVATION	1M813	PAFLD
2A1A1A6	3110-01-414-1805	14636-5001-103 or 1222A11	BEARING, 4PT ANGULAR CONTACT, ELEV	1M813	PAFLD
2A1A1MS1	5330-01-380-9549	NS67400-0022	SEAL FLANGE	15566	PAFZZ
2A2A1MS3	5985-01-413-9062	171789X	SKINPANEL PACK	35844	PBFDD
2A1A1SR	5331-01-381-2557	5-069N674-70	O-RING	02697	PCFZZ
2A1A3		40505-1201-101	AZIMUTH ASSEMBLY, FSP/REDUNDANT	26795	PBFDD
2A1A3		54636-1201-101	AZIMUTH ASSEMBLY, LPP	26795	PBFDD
2A1A3A3A1	3010-01-436-0701	14636-5003-3	GEARBOX, AZIMUTH	1M813	PAFDD
2A1A3A5	3120-01-388-6395	14636-5001-102 or 1222A10	BEARING, 4PT ANGULAR, CONTACT, AZ	0HRJ8	PAFLD
2A2	5985-01-414-9266	172560X	FEED ANTENNA ASSEMBLY	84147	PBFDD
2A2A1	5985-01-417-4618	172816X	FEED/POLARIZER ASSEMBLY	84147	PBFDD
2A2A1MP1 - 2A2A1MP18	5985-01-417-6540	171740X	REFLECTOR SKIN PANEL	84147	PAFZZ

TABLE 3.2
DEPOT TEAM CORRECTIVE MAINTENANCE ITEMS LIST

ASN	NSN	PART NUMBER	ITEM NAME	CAGE CODE	SMR
3A1	5895-01-387-5785	1D20992G01	CONTROL PANEL	97942	PAFDD
4/104		1525325	RECEIVER	56232	PBFDD
5/105		1221821	DATA PROCESSOR	56232	PBFDD
W10-301	5995-01-362-0504	1213464-301	CABLE ASSEMBLY	56232	PAFZZ
W10-302	5995-01-362-0500	1213464-302	CABLE ASSEMBLY	56232	PAFZZ
W10-303	5995-01-362-0499	1213464-303	CABLE ASSEMBLY	56232	PAFZZ
W10-304	5995-01-362-0501	1213464-304	CABLE ASSEMBLY	56232	PAFZZ
W10-305	5995-01-362-0502	1213464-305	CABLE ASSEMBLY	56232	PAFZZ
W10-306	5995-01-362-0503	1213464-306	CABLE ASSEMBLY	56232	PAFZZ
W10-307	5995-01-387-3787	1213464-307	CABLE ASSEMBLY	56232	PAFZZ
W10-308	5995-01-387-3808	1213464-308	CABLE ASSEMBLY	56232	PAFZZ
W10-309	5995-01-387-3809	1213464-309	CABLE ASSEMBLY	56232	PAFZZ
W10-310	5995-01-387-3177	1213464-310	CABLE ASSEMBLY	56232	PAFZZ
W10-311	5995-01-387-3810	1213464-311	CABLE ASSEMBLY	56232	PAFZZ
W10-312	5995-01-432-6306	1213464-312	CABLE ASSEMBLY	56232	PAFZZ
W10-314	5995-01-469-5861	1213464-314	CABLE ASSEMBLY	56232	PAFZZ
W10-317	5995-01-469-5885	1213464-317	CABLE ASSEMBLY	56232	PAFZZ
W10-318	5995-01-469-5888	1213464-318	CABLE ASSEMBLY	56232	PAFZZ
W10-319	5995-01-469-5892	1213464-319	CABLE ASSEMBLY	56232	PAFZZ
W110-301	5995-01-469-6169	1218221-301	CABLE ASSEMBLY	56232	PAFZZ
W110-303	5995-01-469-6171	1218221-303	CABLE ASSEMBLY	56232	PAFZZ
W110-304	5995-01-469-6172	1218221-304	CABLE ASSEMBLY	56232	PAFZZ
W110-305	5995-01-432-6315	1218221-305	CABLE ASSEMBLY	56232	PAFZZ
W110-308	5995-01-470-6732	1218221-308	CABLE ASSEMBLY	56232	PAFZZ
W131-310	5995-01-467-8525	1213477-310	CABLE ASSEMBLY	56232	PAFZZ
W131-313	5995-01-469-5895	1213477-313	CABLE ASSEMBLY	56232	PAFZZ
W3-301	6150-01-360-9803	1213460-301	CABLE ASSEMBLY	56232	PAFZZ
W3-302	6150-01-360-9804	1213460-302	CABLE ASSEMBLY	56232	PAFZZ
W3-303	6150-01-360-9805	1213460-303	CABLE ASSEMBLY	56232	PAFZZ
W3-304	6150-01-360-9806	1213460-304	CABLE ASSEMBLY	56232	PAFZZ
W3-305	6150-01-360-9807	1213460-305	CABLE ASSEMBLY	56232	PAFZZ
W3-306	6150-01-360-9808	1213460-306	CABLE ASSEMBLY	56232	PAFZZ
W3-307	6150-01-388-7609	1213460-307	CABLE ASSEMBLY	5623\	PAFZZ

TABLE 3.2
DEPOT TEAM CORRECTIVE MAINTENANCE ITEMS LIST

ASN	NSN	PART NUMBER	ITEM NAME	CAGE CODE	SMR
W3-308	6150-01-388-7613	1213460-308	CABLE ASSEMBLY	56232	PAFZZ
W3-309	6150-01-388-7614	1213460-309	CABLE ASSEMBLY	56232	PAFZZ
W3-310	6150-01-388-7612	1213460-310	CABLE ASSEMBLY	56232	PAFZZ
W3-311	6150-01-388-7611	1213460-311	CABLE ASSEMBLY	56232	PAFZZ
W3-312	6150-01-387-6854	1213460-312	CABLE ASSEMBLY	56232	PAFZZ
W31-301	5995-01-360-9755	1213477-301	CABLE ASSEMBLY	56232	PAFZZ
W31-303	5995-01-360-9756	1213477-303	CABLE ASSEMBLY	56232	PAFZZ
W31-314	5995-01-469-5898	1213477-314	CABLE ASSEMBLY	56232	PAFZZ
W31-317	5995-01-469-5904	1213477-317	CABLE ASSEMBLY	56232	PAFZZ
W4-301	5995-01-362-0498	1213461-301	CABLE ASSEMBLY	56232	PAFZZ
W4-302	5995-01-362-0494	1213461-302	CABLE ASSEMBLY	56232	PAFZZ
W4-303	5995-01-368-4586	1213461-303	CABLE ASSEMBLY	56232	PAFZZ
W4-304	5995-01-362-0495	1213461-304	CABLE ASSEMBLY	56232	PAFZZ
W4-305	5995-01-362-0496	1213461-305	CABLE ASSEMBLY	56232	PAFZZ
W4-306	5995-01-362-0497	1213461-306	CABLE ASSEMBLY	56232	PAFZZ
W4-307	5995-01-387-6396	1213461-307	CABLE ASSEMBLY	56232	PAFZZ
W4-308	5995-01-387-3631	1213461-308	CABLE ASSEMBLY	56232	PAFZZ
W4-309	5995-01-387-3632	1213461-309	CABLE ASSEMBLY	56232	PAFZZ
W4-310	5995-01-387-3639	1213461-310	CABLE ASSEMBLY	56232	PAFZZ
W4-311	5995-01-388-3804	1213461-311	CABLE ASSEMBLY	56232	PAFZZ
W4-312	5995-01-469-5840	1213461-312	CABLE ASSEMBLY	56232	PAFZZ
W53-303	5995-01-360-9757	1213591-303	CABLE ASSEMBLY	56232	PAFZZ
W53-302	5995-01-360-9767	1213591-302	CABLE ASSEMBLY	56232	PAFZZ
W53-304	5995-01-360-9758	1213591-304	CABLE ASSEMBLY	56232	PAFZZ
W53-305	5995-01-360-9779	1213591-305	CABLE ASSEMBLY	56232	PAFZZ
W53-306	5995-01-360-9759	1213591-306	CABLE ASSEMBLY	56232	PAFZZ
W53-510	5995-01-360-9765	1213591-510	CABLE ASSEMBLY	56232	PAFZZ
W54-309	5995-01-360-9760	1213591-309	CABLE ASSEMBLY	56232	PAFZZ
W54-308	5995-01-360-9761	1213591-308	CABLE ASSEMBLY	56232	PAFZZ
W54-310	5995-01-360-9762	1213591-310	CABLE ASSEMBLY	56232	PAFZZ
W54-311	5995-01-360-9763	1213591-311	CABLE ASSEMBLY	56232	PAFZZ
W54-312	5995-01-360-9764	1213591-312	CABLE ASSEMBLY	56232	PAFZZ
W54-511	5995-01-362-0505	1213591-511	CABLE ASSEMBLY	56232	PAFZZ

TABLE 3.3
WSR-88D SYSTEM RECOMMENDED ON-SITE SPARES LIST

ASN	NSN	PART NUMBER	ITEM NAME	FAA QTY	DOD QTY	NWS QTY
R400-10A6A1MT1A2	5895-01-417-2700	408-2200	ELECTRONIC UNIT	0	1	0
R400-12DS1	6240-00-842-2887	825-1 or 116A21TS	LAMP TRAFFIC INCDS	2	0	2
R400-2A1A1A2A1	7050-01-388-0992	14636-5017-1	ENCODER	1	1	1
R400-2A1A1B1	6105-01-394-5305	14636-5018-1	DC SERVO MOTOR	1	0	1
R400-2A3A1	5895-01-400-3043	AMC1164	LIMITER, PASSIVE	0	1	0
R400-2A4	5895-01-362-0550	1213674-201 or RF1784B	AMPLIFIER, RF, LOW NOISE	0	1	0
R400-2A5	5895-01-368-4590	1213625-201 or 70069	RF POWER MONITOR	1	1	1
**R400-21A3A20	5998-01-358-4474	35-910F01	ASSEMBLY, PCB	1	0	1
**R400-21A4A2	5998-01-397-8290	1222421-204 or FV5310-MG03	NARROWBAND MODULE	0	1	0
R400-22A1A1	5895-01-377-7114	1219739-209 or 21100	MODEM, DATA, DUAL	0	1	1
R400-22A1A11-1	5895-01-377-7105	1219739-207 or 40363	CARD NEST, SINGLE MODEM	0	1	1
R400-22A1PS1	6130-01-371-5048	80406	POWER SUPPLY	0	1	0
R400-3A5	6625-01-316-0780	1A20768A01	PULSE SHAPER MODULE	1	1	1
R400-3A11	5996-01-455-9921	2500008-301	TRIGGER AMPLIFIER	1	1	1
R400-3A10	6110-01-315-9249	1D20990G01	CHARGING SWITCH	1	1	1
R400-3A8	6110-01-471-6084	2500004-301	POST CHARGE REG	0	1	0
R400-3S8	5930-01-322-0288	645A856H05 or PSF106A-6638	SENSOR, PRESSURE	1	0	1
R400-3S10	6685-01-322-2236	645A856H06 or PSF106A-6639	SENSOR, PRESSURE	1	1	1
R400-3A7HP1	4320-00-590-9245	646A034H01	OIL PUMP	0	1	0
R400-3A3A3	5998-01-295-0536	706J221G01	RMS INTERFACE	1	1	1
R400-3A3A4	5998-01-362-0583	706J233G01	CONTROL ADAPTER	0	1	0
R400-3A4	5963-01-316-0781	645A794A02	RF DRIVER MODULE	0	1	0
R400-3PS2	6130-01-466-4506	2500010-301	POWER SUPPLY, FOCUS COIL	0	1	0
R400-3A12A3	5961-01-462-2266	2500007-301	BACKSWING DIODE STACK	1	1	1
R400-3A12A1	5961-01-362-0585	3D55852G01	RBBDT SWITCH	0	1	0
R400-4A8	5985-01-362-0532	1213636-201 or IF/51022	IF ATTENUATOR ASSY	1	1	1
R400-4A11	7050-01-389-7116	1526322-301	A/D CONVERTER ASSY	0	1	0
R400-4A22	5985-01-370-2169	1213622-201	SWITCH, RF, SOLID ST	0	1	0
R400-4A32	6660-01-368-4618	1526651-301	RECEIVER INTERFACE	1	1	1
R400-4B1	4140-01-105-2015	1213829-201	FAN	1	0	1
R400-41A1A1	5998-01-292-1352	1213823-201or IC456C-R2	CONVERTER, (1C456C)	1	0	1
R400-41A13A2	5998-01-355-4129	512184-04	PCB, REFRESH MEMORY	1	2	1
R400-41A13A12	5998-01-362-0560	513686-01 REV B8	PCB, GRAPHICS	1	2	1
R400-44A1	7025-01-380-1651	DT-130	MOUSE, DATA ENTRY	1	0	1
**R400-5A1A1	5998-01-389-2612	1222346-203 or 224001	MODULE, VCI-V	0	2	1
**R400-5A1A2	5998-01-388-1194	7921104-00	CCA, WIDEBAND COMMS	0	1	0
R400-5A1A4	5998-01-408-3076	12V-219-R03J12MP85	VME CHASSIS ASSY	0	1	0
R400-5A3A1	5998-01-387-0386	1389802-302	DIGITAL DAU BOARD	1	1	1

TABLE 3.3
WSR-88D SYSTEM RECOMMENDED ON-SITE SPARES LIST

ASN	NSN	PART NUMBER	ITEM NAME	FAA QTY	DOD QTY	NWS QTY
R400-5A3A2	5998-01-385-1668	1526471-301	ANALOG DAU BOARD	1	1	1
**R400-5A5A1	7025-01-369-4726	27-199	TAPE DRIVE, 1/4 IN	1	2	1
**R400-5A5A2	7025-01-387-3167	27-204	DISK DRIVE, 600MB	1	2	1
R400-5A6A1	5998-01-380-1642	40505-1301-102	PWA, ANALOG W/NOTCH	1	0	1
R400-5A6A2	5998-01-386-8526	40505-1302-102	PWA, DIGITAL BOARD	1	1	1
R400-5A8B1	7021-00-483-0051	36-011	FAN, MUFFIN	1	0	1
R400-5A9A8	5998-01-362-0568	7172737-01	AU MEMORY	1	1	1
R400-5A10A4	5998-01-362-0572	7172765-01 or 7172765-02	CCA SYNCHRONIZER (SINGLE THREAD)	0	1	1
R400-5A10A4-3	5998-01-399-0267	7172765-03	CCA SYNCHRONIZER (SINGLE OR REDUNDANT)	1	0	1
R400-5A10A5	5998-01-362-0573	7172753-01	CIRCUIT CARD ASSEMBLY	0	1	0
**R400-5A12A5	5998-01-393-0424	35-941	PCB, DMI	1	2	1
**R400-5A12A13	5998-01-347-3559	35-732	PCB, SELCH	1	2	1
R400-5A12A19	5998-01-362-0576	35-702	BD ASSY, 8 LINE COMM	1	1	1
**R400-5A12A18	5998-01-388-7617	1222346-202 or 202660	MODULE, VCI-C	0	2	1
**R400-5A13A1B1	4140-01-355-8060	36-049	FAN ASSY	1	0	1
**R400-5PS5A2	6130-01-408-7820	93-ABR	DC POWER MODULE	1	1	1
**R400-5PS5A3	6695-01-377-7803	09-227	CDS MASTER MODULE	1	1	1
***R400-70/170A1A1A2	7025-01-492-7691	2210009-207 or 370-3159-01	DISK DRIVE, 3.5" FLOPPY	1	1	1
***R400-70/170A5	7025-01-492-7641	2210017-203 or 320-1272-01	KEYBOARD	1	1	1
***R400-70/170A6	7025-01-467-9370	2210017-204 or 370-3631-01	MOUSE	1	1	1
***R400-70/170A7A1A3	7025-01-492-7668	2210017-208 or 370-3694-01	DISK DRIVE, CD ROM 32X	1	1	1
***R400-70/170A7A1A4	7025-01-492-7673	2210017-209 or 370-3693-01	HARD DISK DRIVE, 9GB	1	1	1
		TOTAL LINE ITEMS		39	49	44
		TOTAL ITEMS		40	57	45
LEGEND:	**		Item to be deleted in the RPG by ORPG deployment			
	***		Item to be added in the RPG by ORPG deployment			

TABLE 3.4
WSR-88D PUP RECOMMENDED ON-SITE SPARES LIST

ASN	NSN	PART NUMBER	ITEM NAME	FAA QTY	DOD 1-3	DOD 4-7	DOD 8+	NWS QTY	NAVY QTY
R400-21A3A5	5998-01-393-0424	35-941	PCB, DMI	1	1	1	1	1	0
R400-21A3A20	5998-01-358-4474	35-910	ASSEMBLY, PCB	1	0	0	0	1	1
R400-21A9PS1	6130-01-368-8645	34-046	POWER SUPPLY, PERIPH	0	0	0	0	0	1
R400-4B1	4140-01-105-2015	1213829-201	FAN	0	0	0	0	0	1
R400-41A1A1	5998-01-292-1352	1213823-201	CONVERTER, (1C456C)	1	1	2	2	1	1
R400-41A13A2	5998-01-355-4129	512184-04	PCB, REFRESH MEMORY	1	1	1	1	1	1
R400-41A13A12	5998-01-362-0560	513686-01 REV B8	PCB, GRAPHICS	1	1	1	2	1	1
R400-41A13B1	4140-01-380-0879	0110020-01	FAN, 3.62 IN 115V 50/60 HZ	0	0	0	0	0	1
R400-41A13B4	4140-01-482-3967	0100101-00	FAN, 115V, 50/60	0	0	0	0	0	1
R400-41A15A1	7025-01-369-4726	27-199	TAPE DRIVE, 1/4 IN	1	1	1	2	1	1
R400-41PS1A3	6695-01-377-7803	09-227	CDS MASTER	1	0	0	0	1	0
R400-41PS3	6130-01-291-7513	1214505-202	POWER SUPPLY	0	0	0	0	0	1
R400-44A1	7025-01-380-1651	DT-130	MOUSE, DATA ENTRY	1	0	0	0	1	1
R400-5A1A1	5998-01-389-2612	1222346-203 or 224001	MODULE, VCI-V	0	1	1	1	1	0
R400-5A5A2	7025-01-387-3167	27-204	DISK DRIVE, 600MB	1	1	1	2	1	1
R400-5A8B1	7021-00-483-0051	36-011	FAN, MUFFIN	0	0	0	0	0	1
R400-5A12A13	5998-01-347-3559	35-732	PCB, SELCH	1	1	1	1	1	1
R400-5A12A18	5998-01-388-7617	1222346-202 or 202660	MODULE, VCI-C	0	1	1	1	1	0
	TOTAL LINE ITEMS			10	9	9	9	12	14
	TOTAL ITEMS			10	10	14	21	12	14

TABLE 3.5
WSR-88D SYSTEM CONSUMABLE LIST

ASN	NSN	PART NUMBER	ITEM NAME	QUANTITY
R400-MS25237-385AS15	6240-01-103-3081	MS25237-385AS15	LAMP, INCANDESCENT	1
017-F-7-40S	5920-00-880-0603	AGX-2	FUSE, 2 AMP 250V	5
017-F-5-31S	5920-00-238-3087	MDL-2	FUSE, 2 AMP 250V SLO-BLO	5
R400-10MG1M1MP2-1	2910-00-100-3354	AR50041	FILTER, FUEL (KOHLE)	2
R400-10MG1M1MP5-1	2910-01-331-1771	PMFS1247	FILTER, WATER SEPARATOR (KOHLE)	2
R400-10MG1M1MP4-1	2940-00-007-4791	T19044	FILTER, OIL (KOHLE)	2
R400-10MG1M1MP1-1	2940-01-407-3802	PMAF4539	FILTER, AIR (KOHLE)	2
**R400-5A5A1C02	7035-01-373-5972	102791-12	KIT, HD CLEANING, 1/4 INCH DRIVE	1
**018-R-12	7510-01-235-0934	52102001	RIBBON, OKIDATA PRINTER	6
**018-P-7	7530-00-800-0996	UU-P-546	PAPER, PRINTER	1
R400-014-O-20	9150-01-418-8738	SCH75W	OIL, LUBRICATING, 5 GAL. PEDESTAL GEARBOX	1
R400-014-O-21	9150-93-000-0002	SCH75W	OIL, LUBRICATING, 1 QT., PEDESTAL GEARBOX	1
R400-014-O-22	9150-01-389-2196	TRIBOLUBE-L3-5	OIL, LUBRICATING, LOW TEMP, 5 GAL., PEDESTAL GEARBOX	@
R400-014-O-23	9150-01-310-5762	TRIBOLUBE-L3-1	OIL, LUBRICATING, LOW TEMP, 1 QT., PEDESTAL GEARBOX	@
R400-47C05	9150-01-386-9285	006-2037-00	LUBE, PRINTER	1
R400-47C03	7530-01-295-4885	016-0895-00	TRANSPARENCIES	1
R400-47C02	7510-01-295-9274	016-0898-00	TRANSFER, ROLL	1
R400-47C01	7035-01-348-1257	016-1058-01	CLEANER, HEAD	1
052-S-1	1365-01-359-7102	25S, ES400	SMOKE, DETECTOR	1
R400-3A7C01	9160-01-142-5748	55822AV	OIL, DIELECTRIC, 5 GAL.	1
R400-47C04	7530-01-295-4886	016-0981-00	PAPER, 8-1/2 X 11 COLOR PRINTER	1
014-G-14	9150-00-935-4018	AEROSHELL GREASE 17 or MIL-G-21164	GREASE, CARTRIDGE	1
017-F-7-50	5920-01-013-2389	F02A125V8A	FUSE, 3AG 8 AMP 32 V	5
017-F-4-15	5920-00-050-4953	F02A250V1-1/2A	FUSE, 3AG 1.5 AMP 250 V	5
017-F-4-10	5920-00-280-8342	AGC1	FUSE, 1AMP, 250 V	5
017-F-4-5	5920-00-280-8344	F02A250V1/2A	FUSE, 3AG 0.5 AMP 250 V	5
017-F-40-39	5920-00-011-7142	F02A125V10A	FUSE, 10 AMP 125 V	5
017-F-40-21	5920-00-010-6652	AGC-3	FUSE, 3 AMP 250 V	5
017-F-4-8	5920-00-284-9494	F02A250V3-4AS	FUSE, 3AG 0.75 AMP, 250 V	5
017-F-4-30	5920-00-557-2647	AGC4	FUSE, 3AG 4 AMP 250 V	5
017-F-40-29	5920-01-240-8022	FNQ-5	FUSE, 5 AMP 500 V	5
017-F-40-25	5920-01-017-0683	GMA-3	FUSE, 3 AMP 250 V	5
017-F-40-52	5920-00-927-5567	KTK10	FUSE, 10 AMP 600 V	5
017-F-40-7	5920-00-284-9220	MDL-1	FUSE, 1 AMP 250V	5
017-F-5-19	5920-00-284-7134	MDL-15	FUSE, 15 AMP 32 V	5
017-F-5-18	5920-00-280-3178	MDL25/10	FUSE, 2.5 AMP 125 V	5
017-F-5-18	5920-01-041-9168	F02B250V2-1/2A	FUSE, 2.5 AMP 250 V (ALTERNATE FOR P/N MDL25/10)	
017-F-5-22	5920-01-032-6471	BUSS MDL-6-1/4	FUSE, 6.25 AMP 32 V	5
017-F-40-23	5920-01-028-5727	BUSS MDL3	FUSE, 3 AMP 250 V	5
017-F-5-25A	5920-00-156-7375	F02B250V1-1/4A	FUSE, 1.25 AMP 250 V	5

TABLE 3.5
WSR-88D SYSTEM CONSUMABLE LIST

ASN	NSN	PART NUMBER	ITEM NAME	QUANTITY
017-F-40-45	5920-01-123-5836	SC15 or 24-071	FUSE, 15 AMP 300 V	5
**R400-5A5A1C01	7045-01-193-4991	DC600A	TAPE, CARTRIDGE	1
017-F-40-17	5920-01-093-8458	F02A250V2-1-2A	FUSE, 3AG 2.5 AMP 250 V	5
017-F-40-49	5920-01-311-6724	FLQ 20	FUSE, 20 AMP 500 V	5
**R400-21A9A3D1	7045-01-368-1667	LM510	DISK, OPTICAL	3
017-F-4-35	5920-00-284-6787	F02A250V5A	FUSE, 3AG 5 AMP 250 V	5
017-F-5-45	5920-00-284-6795	F02B32V10A	FUSE, 3AG 10 AMP 32 V	5
R400-3B3MP1-1	3030-01-439-0886	588R721H04 or 3VX265	BELT, 26.5 INCH	1
R400-3B3MP1-2	3030-01-473-7476	2200052-201 or 3VX257 or JA-257-C	BELT, 25.7 INCH	1
***R400-70/170A8D1	7045-01-469-1588	2210008-201 or 10599	DISK, JAZ, 2GB	20
LEGEND:	@ Alternates for Sites with low temperature environments			
	** Item to be deleted in the RPG by ORPG deployment			
	*** Item to be added in the RPG by ORPG deployment			

TABLE 3.6
WSR-88D PUP CONSUMABLE LIST

ASN	NSN	PART NUMBER	ITEM NAME	QUANTITY
017-F-40-21	5920-00-010-6652	AGC-3	FUSE, 3 AMP 250 V	5
017-F-40-39	5920-00-011-7142	F02A125V10A	FUSE, 10 AMP 125 V	5
017-F-5-31S	5920-00-238-3087	MDL-2	FUSE, 2.0 AMP 250 V, SLO-BLO	5
017-F-4-10	5920-00-280-8342	AGC1	FUSE, 1 AMP 250 V	5
017-F-4-5	5920-00-280-8344	F02A250V1/2A	FUSE, 3AG 0.5 AMP 250 V	5
017-F-40-7	5920-00-284-9220	MDL-1	FUSE, 1 AMP 250 V	5
017-F-4-30	5920-00-557-2647	AGC4	FUSE, 3AG 4 AMP 250 V	5
017-F-7-40S	5920-00-880-0603	AGX-2	FUSE, 2 AMP 250 V	5
017-F-40-25	5920-01-017-0683	GMA-3	FUSE, 3 AMP 250 V	5
017-F-40-17	5920-01-093-8458	F02A250V2-1-2A	FUSE, 3AG 2.5 AMP 250 V	5
017-F-40-45	5920-01-123-5836	SC15 or 24-071	FUSE, 15 AMP 300 V	5
R400-21A9A3D1	7045-01-368-1667	LM510	DISK, OPTICAL	3
R400-47C01	7035-01-348-1257	016-1058-01	CLEANER, HD, COLOR PRNTR	1
R400-5A5A1C02	7035-01-373-5972	102791-12	KIT, HD CLEANING, 1/4 INCH DRV	1
R400-5A5A1C01	7045-01-193-4991	DC600A	TAPE, CARTRIDGE, MAGNETIC	10
R400-47C02	7510-01-295-9274	016-0898-00	TRANSFER ROLL (FILM)	5
R400-47C03	7530-01-295-4885	016-0895-00	TRANSPARENCIES, 8-1/2 X 11	1
R400-47C04	7530-01-295-4886	016-0981-00	PAPER, 8-1/2 X 11 COLOR PRINT	1
R400-47C05	9150-01-386-9285	006-2037-00	LUBE, PRINTER	1

TABLE 3.7
WSR-88D PECULIAR SUPPORT EQUIPMENT

SERD NO.	ASN	NSN	PART NUMBER	ITEM NAME	RDA	RPG	PUP	MLOS
1	R400-SE6	3940-01-391-2615	WSP4415	SLING, KLYSTRON TUBE AND FOCUS COIL	X			
2	R400-SE1	4320-01-388-2118	1219694-301	OIL TRANSFER PUMP KIT	X			
3	R400-SE7	3920-01-390-2989	86D064	SERVICE DOLLY, KLYSTRON	X			
5	R400-SE5	3950-01-393-3802	SH-10	CHAIN HOIST	X			
6	R400-SE8	4910-01-197-4887	1213760-201 or SD1984REVB	DAVIT CRANE, RDA TOWER	#			
8	R400-SE16	6625-01-399-1601	R400-SE16	AGC TEST FIXTURE	X			
24	R400-SE10	5998-01-388-4555	7172731-00 or 9495	CARD EXTRACTOR, HSP/PSP	X			
26	R400-SE11	5995-01-390-2560	17-380	LOOPBACK CABLE, DIO			X	
28	R400-SE12	4720-01-389-1475	3F6132 or 1219680-201	DRAIN HOSE PEDESTAL OIL W/ 15 FT HOSE	X			
40**	R400-SE15	5995-01-390-2565	17-679	LOOPBACK CABLE, MPC	X	X	X	
42	R400-SE4	5995-01-389-7282	4292-0011 or 1219679-301	LOOPBACK CONNECTOR, GRAPHICS TABLET			X	
53**	R400-SE18	5935-01-393-5089	3713-0002 or 1221801-301	LOOPBACK CABLE, RS232 TO 422 CONVERTER		%	%	
54	R400-SE19	5935-01-397-4326	3713-0003 or 1221800-301	LOOPBACK CONNECTOR, MODEM ELIMINATOR RS-232			%	
56	R400-SE23	5998-01-297-1709	1D22733G01	EXTENDER, CARD, TRANSMITTER	X			
60	R400-SE21	5998-01-368-8077	513917	CARD EXTRACTOR, RAMTEK			#	
61	R400-SE22	4920-01-417-2706	M709	TOOL, KLYSTRON ADJUSTMENT	#			
62	R400-SE29	5998-01-390-2987	SD-97059 OPT A	EXTENDER CARD (MLOS)				X
63	R400-SE30	5998-01-387-9046	SD-97273 OPT A	EXTENDER CARD (MLOS)				X
64	R400-SE24	5998-01-387-8995	7180771	EXTENDER CARD (HSP)	X			
	R400-SE25	3950-01-354-2517	4214-2262	CRANE, CURVED OUTRIGGER	X			
	R400-SE31	5995-01-200-8094	17-514R01	EIGHT LINE COMMS MULTIPLEXER LOOP CABLE	X			
66	R400-SE34	5120-01-407-8166	R400-SE34	SWITCH SLEEVE SPANNER WRENCH	X			
69	R400-SE41	5315-01-433-8106	2100001-101	PIN, ENGAGEMENT	X			
101	R400-SE47	6150-01-492-7226	2200101-201 or CBCC166411-24 or LSGTSI03A06	LOOPBACK CABLE ASSEMBLY		***		
102	R400-SE48	5995-01-492-1903	2210042-206 or PT-ACCMPS-10983 PTI160P0341	RS232/530 NULL MODEM CABLE		***		
LEGEND:	**			Item to be deleted in the RPG by ORPG deployment				
	#			Item delivered as part of site installation.				

TABLE 3.7
WSR-88D PECULIAR SUPPORT EQUIPMENT

	%			Item used only at co-located RPGOPs.				
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TABLE 3.8
WSR-88D COMMON SUPPORT EQUIPMENT

SERD	ASN	NSN	PART NUMBER	ITEM NAME	RDA	RPG	PUP	MLOS
9	T331	6625-01-033-5050	HP 436A	POWER METER, DIGITAL	X			
10	T313-2	6625-01-028-2882	HP8484A	POWER SENSOR -70 TO -20 dBm	X			
11, 39	T372	6625-01-327-3306	2236A-02	OSCILLOSCOPE	@		@	
11, 39	T373	6625-01-371-5069	2235A	OSCILLOSCOPE			@	
*****11	T374	6625-93-000-0040	TDS 420	OSCILLOSCOPE, DIGITAL	@			
12, 65	T333	6625-01-312-2930	87	MULTIMETER, HAND HELD	X		@	
12	T329	6625-01-157-2246	8060A	MULTIMETER, HAND HELD			@	
15	T335	6625-01-304-4945	AM-48	TRANSMISSION LINE TEST SET		X	X	
****16		6625-01-311-5272	HP 8563A-K01	SPECTRUM ANALYZER	@			
16	T800	6625-01-326-8976	8563A-E01	SPECTRUM ANALYZER, DIGITAL	@			
18	T543	6625-01-327-5153	HP 423B OPT 003	DIODE DETECTOR BNC/TYP N	X			
19	T332	6625-01-336-6150	DT-5	TEST SET TRANSMISSION		X	X	
21	017-T-7	6625-00-286-4302	923700	DIP CLIP 16 PIN			X	
27	T331-2	6625-01-297-2594	HP 8481H	POWER SENSOR -10 TO +34.7 dBm	X			
34	T701	6625-01-284-6869	HP 346A	NOISE SOURCE	X			
36	T331-10	5985-01-305-3003	3324-4	POWER SPLITTER (4-WAY)	X			
37	T542	5985-00-813-9111	HP 908A	TERMINATOR 50 OHM	X			
38	T600	6625-00-484-6354	HP 11581A	ATTENUATOR KITS	X			
38A	T600-5	5985-01-272-0914	8491A-030-890	ATTENUATOR, COAX, TYPE N 30 dB	X			
43	T313-1	6625-00-354-9762	HP 8481A	POWER SENSOR, -30 TO +20 dBm	X			
44	T605	5985-01-138-3578	HP 8494A OPT 001-UK6	ATTENUATOR, STEP 0 - 11 dB	X			
45	T606	5985-01-249-6037	HP 8496A OPT 001-UK6	ATTENUATOR, STEP 0 - 110 dB	X			
46	T606-1	5985-01-107-7801	HP 11716A	INTERCONNECTION KIT	X			
47	T158	6625-01-275-6268	HP 5350B OPT 001	RF FREQUENCY COUNTER	X			
48	T372-1	6625-01-040-4423	P6015A	HIGH VOLTAGE PROBE	X			
49	T229	6625-01-324-6462	600/.01-8-OPT 03	RF SIGNAL GEN, 10 MHZ TO 8 GHz	@			
49	T229A	6625-01-391-5354	HP 8648C OPT 1E5-1E6	RF SIGNAL GENERATOR	@			
50	017-T-8	5999-01-161-9958	923718	28 PIN DIP CLIP	X			
51	T434	6625-01-061-1117	OC51M	OIL TEST SET, PORTABLE	@			
51	T434A	6625-01-455-2312	OC60D&TC/DE	OIL TEST SET, PORTABLE	@			
55	T541	6625-01-047-7309	HP 545A	PROBE, LOGIC	X			
57	T616	5985-01-029-4624	HP S281A	ADAPTER, WAVEGUIDE TO COAX	X			
58	T330	6625-01-019-3335	HP 4328A	MILLIOHMETER/HIGH RESIST METER	@			
58	T330A	6625-01-373-2278	HP4338A	MILLIOHMETER, DIGITAL	@			
67		6625-01-028-4989	HP 3312A	TEST OSCILLATOR	@			@
67	T230	6625-01-310-7438	21	FUNCTION GENERATOR	@			@
80	T900	6635-01-239-6812	GD-30	DYNAMOMETER, GRAM FORCE	X			

TABLE 3.8
WSR-88D COMMON SUPPORT EQUIPMENT

SERD	ASN	NSN	PART NUMBER	ITEM NAME	RDA	RPG	PUP	MLOS
81	T901	6635-00-921-6255	12998-F	TESTER, BELT TENSION	X			
82		5985-01-078-6821	37261	ATTENUATOR, HIGH POWER	@			
*****82	T600-6	5985-94-000-0001	23-6-34	ATTENUATOR, HIGH POWER	@			
90	041-L-4	5210-00-223-9607	98-12	LEVEL, PRECISION	X			
91	R400-SE49	5210-00-293-3511	GGG-R-791 TY3CLIST3	RULE, MULTIPLE FOLD	X			
95	R400-SE42	5120-01-449-7588	NWS-6000-SP1	TOOL KIT, EXTRACTION/INSERTION	X	X	X	
96	R400-SE43	5935-01-458-6310	234	PANEL PUNCH, ELECTRONIC		X	X	
98	R400-SE45	7910-01-467-2748	3685 or 2200064-201	VACUUM CLEANER, CANNISTER,	X			
99	R400-SE46	6625-01-492-3940	2244/20 or EQUIVALENT	RADIATION HAZARD METER, EMR-20	X			
100	T411	6625-01-487-0700	78-110	NETWORK CABLE TESTER		***		
*****103	060-P-10	NWS9-92-030-0010	210WDLS6 or EQUIVALENT	LANYARD, 6 FT POSITIONING	X			
104	060-P-14	4020-01-493-7701	1220007 or EQUIVALENT	LANYARD, 3 FT SHOCK ABSORBING	X			
*****105	060-P-4	NWS9-92-030-0003	1105754	HARNESS, SAFETY, SMALL SIZE	X			
*****105	060-P-5	NWS9-92-030-0005	1105750	HARNESS, SAFETY, MEDIUM SIZE	X			
*****105	060-P-6	NWS9-92-030-0006	1105751	HARNESS, SAFETY, LARGE SIZE	X			
*****105	060-P-7	NWS9-92-030-0007	1105752	HARNESS, SAFETY, X-LARGE SIZE	X			
*****105	060-P-8	NWS9-92-030-0008	1105753	HARNESS, SAFETY, XX-LARGE SIZE	X			
LEGEND:	@			Alternate Items for same SERD				
	***			Item to be added in the RPG by ORPG				
	****			Users other than NWS.				
	*****			NWS Only				

TABLE 3.9
WSR-88D SHARED SUPPORT EQUIPMENT

SERD NO.	ASN	NSN	PART NUMBER	ITEM NAME	RDA	RPG	PUP	MLOS
4	R400-SE26	8145-01-388-1190	2D08935G01	CONTAINER, KLYSTRON STORAGE	X			
17*	R400-SE9	6625-01-389-1375	RF/TABEL	AMMETER	X			
30*	R400-SE13	5995-01-388-4552	1219683-301	CABLE, ADAPTER, FOCUS COIL	X			
31*	R400-SE14	5905-01-390-0244	1219695-301	RESIST/ADAPT, FILAMENT POWER	X			
68	T802	6625-01-379-7591	HP11758V	DIGITAL RADIO TEST SYSTEM				X
92	R400-SE37	5895-01-445-4605	54418A-284	ADAPTER, WAVEGUIDE, RECTANGULAR FLANGE	X			
97	R400-SE44-1	6625-01-496-1495	R400-SE44-1	KIT, NOISE SOURCE CALIBRATION	X			

* Issued to all DOD sites and Shared by DOC and DOT sites

**** Users other than NWS.

The following table contains the parts in the TPMS Spares Kit and the quantity of each. This kit is considered an On-Site spare for all DOD sites and Regional spare for the NWS. The FAA is not part of the TPMS Program. The following list gives the quantity of spares kits stationed at each NWS Region:

Southern Region:	3
Eastern Region:	3
Central Region:	3
Western Region:	14
ROC:	1

TABLE 3.10
WSR-88D TPMS SPARES KIT

PART NUMBER	CAGE	NOMENCLATURE	ASN	NSN	QTY
110258056	31795	ASSEMBLY DIAGRAM - LCD PANEL	N/A	N/A	1
101073070-001	31795	CONTROL BOARD - STATIC SWITCH BYPASS	R400-62A3A1	5998-01-491-4744	1
101073071-001	31795	CONTROL BOARD - MONITOR PANEL	R400-62A5A1	5998-01-491-4752	1
101073072-001	31795	CONTROL BOARD - INVERTER	R400-62A4A2	5998-01-491-4756	1
101073073-001	31795	CONTROL BOARD - DC POWER SUPPLY	R400-62PS1	5998-01-491-4760	1
101073074-001	31795	CONTROL BOARD - RECTIFIER	R400-62A4A1	5998-01-491-4766	1
163901048-001	31795	CONTROL BOARD - LCD INVERTER	R400-62A5A3	5998-01-491-5559	1

120515017-001	31795	CAPACITOR - 0.20UF	R400-62A9C21	5910-01-491-5048	1
120519018-001	31795	CAPACITOR - 3.3MF	R400-62A8A1C41	5910-01-436-5774	1
122130089-001	31795	SWITCH - 2 POLE, 20 AMP	R400-62A6S5	5925-01-491-5057	1
128102005	31795	FUSE - 3 AMP, DUAL	017-F-5-35	5920-01-028-5727	2
128103155-002	31795	FUSE - 0.2AMP	R400-62A12F1	5920-00-174-5793	1
128208001-012	31795	FUSE - 1.5AMP	R400-64A1F1	5920-01-256-5830	1
128208001-029	31795	FUSE - 10 AMP	R400-64A1F2	5920-00-370-2479	1
128304038-045	31795	FUSE - 1 AMP, TYPE KTK,	R400-62A2F13	5920-01-257-3545	2
128304038-053	31795	FUSE - 10 AMP, TYPE KTK	R400-62A2F1	5920-01-491-5105	2
128304123	31795	FUSE - 70 AMP	R400-62A1F16	5920-01-332-1033	1
128304128-003	31795	FUSE - 80AMP	R400-62F61	5920-00-033-4339	1
128307025-001	31795	FUSE - 200 AMP, SEMICONDUCTOR	R400-62A8A1F41	5920-01-491-5164	4
129101001-002	31795	THERMAL INTERFACE PAD	R400-62A8A1MP2	5999-01-439-7896	4
129101002-002	31795	THERMAL INTERFACE PAD	R400-62A9PB21MP1	5999-01-491-5442	4
132204002	31795	SPACER - CONTROL BOARD	R400-62E6MP1	5970-00-142-1840	2
132208006	31795	SPACER - CONTROL BOARD	R400-62A3A1MP1	5999-01-491-5457	2
132208047-001	31795	SPACER - CONTROL BOARD	R400-62A4A2MP1	5970-01-491-5458	2
139305015-001	31795	LAMP - LCD DISP	R400-62A5A2DS1	6240-01-491-5473	1
141713001	31795	RESISTOR - 20 OHM, 20 WATT	R400-62A3R61	5905-01-309-8531	1
141923173	31795	SURGE ARRESTOR, 650V	R400-62A3E1	5920-01-044-4158	1
143224023-001	31795	IGBT - 300A, 1200V, N-CHANNEL	R400-62A8A1Q41/Q42	5961-01-491-5523	4
143318022	31795	SCR POWER BLOCK - 1600V, 150A	R400-62A9PB21	5961-01-440-8946	3
151101056-001	31795	FAN - 24VDC, 283 CFM	R400-62A7B1	4140-01-491-5544	1

3.4.2 SE Maintenance and Calibration

Maintenance and calibration of on-site PSE and CSE will be handled differently within each agency. A brief summary of each agency's procedures is given below.

- a. NWS. Calibration and repair of NWS WSR-88D on-site SE will be handled by W/OPS12. Test equipment calibration will be traceable to the National Institute of Standards and Technology (NIST) and is being accomplished using the manufacturer's recommended interval.
- b. Air Force. The accuracies associated with the WSR-88D radar system and supporting Test, Measurement, and Diagnostic Equipment (TMDE) must be traceable to NIST or a DOD-approved source.

The AF Metrology Calibration Detachment 1, Heath, OH, is assigned the responsibility of calibration support planning for systems entering the Air Force inventory. This planning action is accomplished through reviews of contractor prepared documents, such as SERD submittal, support equipment plans, etc.

The calibration and maintenance support of the WSR-88D TMDE designated in Technical Order 33K-1-100 PMEL responsibility will be performed by the closest geographically located PMEL. The owning activity will normally be responsible for PSE. If resources are not available to the owning activity, the PMEL will identify an alternative source at a lower organizational level or provide the required support. When necessary, PMEL's equipped with a Transportable Field Calibration Unit will provide support to remote or off-base locations requiring on-site calibration or repair of TMDE.

- c. Navy/Marine Corps. Calibration of on-site common General Purpose Test Equipment at Navy/Marine Corps locations will be accomplished using the established Navy Metrology and Calibration Program. The Metrology Requirements List is publication NAVAIR 17-35MTL-1/SPAWAR SP4734-310-001/ USMC TI-4733-15/13.
- d. FAA. The policy for each article of test equipment is established by FAA Headquarters. It is the responsibility of the Airway Facilities Sector or Division to see that each site's test equipment is maintained and calibrated in accordance with this policy. Although the FAA's depot in Oklahoma City is available for engineering and repair maintenance and calibration, the Region may contract with a private contractor or with a local Air Force PMEL, depending on the test equipment to be repaired or calibrated.

3.5 Technical Data

Technical Data includes all levels of engineering data, technical manuals, and any other data necessary to operate and support a system over its life cycle. All technical data will be managed and maintained by the ROC. This includes the drawing repository (vault), the drafting work, updating of original text, etc. Engineering data includes specifications, drawings, schematics, manufacturing standards, test criteria, calibration information, and full design disclosure. Engineering data are used to support WSR-88D repair, quality assurance, modification, provisioning, and replenishment procurement of spares and contractor logistics support. The goal of the ROC is to provide electronic access and retrieval of WSR-88D engineering data through the AGILE™ configuration and data management software tool.

The complete suite of technical manuals including operator manuals, maintenance manuals, commercial manuals, parts listings, etc., will be developed, updated, managed, and distributed by the ROC. A more complete discussion of Technical Manuals is found in paragraph 3.14.

3.6 Training and Training Support

3.6.1 Operations Training

Operations training is the responsibility of each agency and is carried out for DOC and DOT by the NWSTC. For DOD, training is provided by the Keesler AFB Technical Training Center.

3.6.2 Maintenance Training

Maintenance training is the responsibility of each agency and is carried out for DOC and DOT at the NWSTC. For DOD maintainers, training is provided by the Keesler AFB Technical Training Center.

3.6.3 Training Equipment

DOC training equipment is located at the NWSTC in Kansas City, Missouri, and in Norman, Oklahoma; and DOD training equipment is located at Keesler Technical Training Center, Keesler AFB, Mississippi. This equipment is configuration controlled, managed, and modified in accordance with procedures applicable to operational systems.

3.7 Facilities

The Facilities functional area includes construction, maintenance, and modification of shelters and other Real Property Installed Equipment (RPIE). Facilities are operated and maintained by each agency according to agency instructions.

3.8 Packaging, Handling, Storage, & Transportation (PHS&T)

PHS&T of WSR-88D components will be in accordance with best commercial practices to insure protection of the items during shipment and handling. NLSC is responsible for PHS&T of outbound shipments. The NRC monitors PHS&T of supplies received, and initiates requests, as required, for assistance from the W/OPS 14, NLSC and the ROC to correct problems in this area should problems arise during the operational life cycle phase of the program.

3.9 Test and Evaluation

Test and Evaluation associated with the deployment of hardware or software modifications to the WSR-88D system is the responsibility of the ROC for sustaining engineering projects and the responsibility of W/OST for NPI projects. ROC maintains the WSR-88D test equipment located in Norman, OK.

3.9.1 Test Program Objectives

Thorough testing of a complex system like the WSR-88D requires the expenditure of a considerable amount of time and resources. Such expenditure should not be done without a clear understanding of the objectives of the test program. These objectives are:

- a. Provide confidence to the WSR-88D agencies that the modified system will meet their operational requirements;
- b. Ensure that overall system reliability, usability, stability, and performance does not deteriorate as a result of modifying the system;
- c. Find as many errors in the modified system as possible, as early as possible in the test cycle and prior to releasing the modification to the field. The earlier errors are found, the cheaper they are to fix; and,
- d. Prevent software defects by promoting the adoption of proven defect prevention methods, such as the inspections and walk-throughs, throughout the development process.

3.9.2 Levels of Testing

The WSR-88D Program has adopted a five-level test cycle in order to ensure modifications are thoroughly tested. These levels are Component Testing, Integration Testing, System Testing, and Acceptance Testing (which includes Operations Testing, and Beta Testing). Component and Integration Testing is informal and will be done by the software and hardware developers, while all formal testing will be managed by an independent test group trained in industry-standard test processes. Software and

hardware under formal test will be controlled by the Configuration Management Team.

3.9.3 Focus of Testing

Testing focuses on three major system attributes: functionality, stability, and performance.

3.9.4 Management of Testing

The ROC and W/OST will centralize WSR-88D formal testing in a group independent of the Engineering function. The ROC testing group is led by the ROC OPS Branch Test Program Manager, who will appoint Test Directors for each formal level of testing, review test plans and test reports. The test group will thoroughly document all formal testing.

3.10 Commissioning and Decommissioning Plans

Commissioning Plans and Decommissioning Plans for each site are the responsibility of each agency.

3.11 Software Maintenance

WSR-88D system software maintenance is accomplished by the ROC based on tri-agency CCB approved change requirements to the operating system, the applications software, support software, background maps, adaptable parameters, and diagnostics. These responsibilities include development or modification of source code, correction and testing of software, documentation of changes, technical documentation development, configuration management, duplication/copy, and distribution to WSR-88D field sites. Software maintenance at the field level is restricted to changing some adaptable parameters. Field sites will load software upgrades provided by the ROC to the WSR-88D system.

3.12 Depot Repair

Centralized depot repair is performed by the NWS NRC (W/OPS16). The NRC located in Kansas City, Missouri, will accomplish LRU repairs utilizing the most cost effective method, either organic or contract, available so that the repair process is transparent to the user. The user is responsible for returning repairable items to the NRC. The NRC will repair the LRU, perform quality control functions, and return the LRU to the NLSC as serviceable, or condemn it as non-repairable.

The NRC will also collect component failure data from information returned with a LRU from a field site as well as information collected during NRC repair process. The NRC will enter the data into a computer network for further analysis by the ROC and user agencies. Contractor repair information will be collected when available.

The Depot Repair Support Plan is included as Appendix D of this plan.

3.12.1 Depot Test Equipment

The NRC will maintain all the hardware and software associated with WSR-88D Automated Test Equipment (ATE) and bench test equipment. When required, the NRC will replenish its test equipment.

3.13 Configuration Management

Overall management of the hardware and software configuration baselines of the WSR-88D systems is the responsibility of the ROC. The processes and agency responsibilities are prescribed by the tri-agency approved WSR-88D Configuration Management Plan, ROCPLN-PGM-03 and the WSR-88D Configuration Control Board Charter, OSFPLN-SSB-06.

3.14 Technical Manuals

The development, revision, printing and distribution of Technical Manuals is the responsibility of the ROC, and is carried out in accordance with the requirements of the Technical Manual Maintenance Plan. Source Maintenance and Recoverability (SM&R) codes will appear in the Illustrated Parts Breakdown Manual to inform the technician of the source of repair, the maintenance action required, and the disposition of the failed item.

A listing of current Technical Manuals and Modification Documents can be found on the Internet at:

<http://www.roc.noaa.gov/ssb/sysdoc/techman/tmlinks.asp>

3.14.1 Technical Manual Changes

The agencies identify suggested changes and submit them using their developed procedures; AFTO Form 22 (AF), Case File (FAA), Publication Change Request (PCR) (NWS). (Note: For the following discussion, the term PCR is used generically to refer to each agencies publication change request.) These changes are then submitted to the ROC. When received, the ROC Documentation Team enters the PCR into a database which assigns a local control number. The PCR is then reviewed by the ROC to determine validity and clarify any procedures/changes. If approved, the PCR is filed until the next manual change and the PCR database is updated. If disapproved, the PCR is filed and the database is updated. All PCR status are obtainable on the ROC website which is updated monthly.

Technical Manual changes are incorporated according to the PCR priority as follows:

EMERGENCY: Change developed and published within 10 calendar days.

URGENT: Change developed and published within 45 calendar days.

ROUTINE: Published in the next change/revision of the document.

A listing of current Publications Change Requests (PCRs) can be found on the Internet at:

<http://www.roc.noaa.gov/ssb/sysdoc/pcrs/pcrmain.asp>

3.14.2 Technical Manual Ordering

USAF: The Air Force uses the standard GO-22 Technical Order Distribution System.

NWS: The ROC sends the manuals to the sites using the CLS System.

FAA: The ROC sends the manuals to the sites using the CLS System based on input provided by AOS-200.

NAVY: The ROC sends the manuals to the sites using the CLS System.

3.15 Modification/Retrofit

The ROC is assigned the lead design and engineering responsibility for sustaining engineering modifications and retrofit of the WSR-88D system. W/OST3, the NWS Systems Engineering Center, is assigned the lead design and engineering responsibility for NPI Projects and retrofit of the WSR-88D system. For CCB approved engineering changes, the ROC and W/OST3 will provide systems engineering and integration for modification and retrofit including the following: development, prototype, planning, documentation, procurement, testing, kit deployment and status reporting. These responsibilities are carried out in accordance with the requirements of the Management Process for WSR-88D Modifications, ROCPLN-PGM-02 REV 1. For Sustaining Engineering projects, retrofit kits for all agencies affected by a change will be requisitioned by the ROC for shipment directly (“pushed”) to the affected site maintenance personnel. The ROC will maintain records for site completion of retrofits which can be accessed through the following web address:
<http://www.roc.noaa.gov/products.htm>.

APPENDIX A ACRONYMS

A _o	Operational Availability
A _s	Service Availability
ACC	Air Combat Command
AETC	Air Education and Training Command
AFCA	Air Force Communications Agency
AFI	Air Force Instruction
AFMC	Air Force Material Command
AFPD	Air Force Policy Directive
AFWA	Air Force Weather Agency
AML	FAA Logistics Center
AND	Office of Communications, Navigation and Surveillance Systems, FAA
AOS	National Airway System Engineering, FAA
APWG	Adaptable Parameter Working Group
ATE	Automatic Test Equipment
AWIPS	Advanced Weather Interactive Processor System
CCB	Configuration Control Board
CLS	Consolidated Logistics System
CNET	Chief of Naval Education and Training
CSE	Common Support equipment
DLA	Defense Logistics Agency
DOC	Department of Commerce
DOD	Department of Defense
DOT	Department of Transportation
ECP	Engineering Change Proposal
FAA	Federal Aviation Administration
FEDSTRIP	Federal Standard Requisitioning and Issue Procedures
FMH	Federal Meteorological Handbook
HQ	Headquarters
ICWG	Interface Control Working Group
ILSP	Integrated Logistics Support Plan
IPM	Integration Program Manager
ISEA	In Service Engineering Activity
JSAO	Joint System Acquisition Office
LRU	Line Replaceable Unit
LWG	Logistics Working Group
MDC	Maintenance Data Collection
MILSTRIP	Military Standard Requisitioning and Issue Procedures
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAVICP	Navy Inventory Control Point
NEXRAD	Next Generation Weather Radar
NIST	National Institute of Standards and Technology

NLSC	NOAA Logistics Supply Center
NMOC	Naval Meteorological and Oceanography Command
NOAA	National Oceanographic and Atmospheric Administration
NPC	NEXRAD Program Council
NPI	NEXRAD Product Improvement
NRC	National Reconditioning Center
NWS	National Weather Service
NWSTC	NWS Training Center
OFCM	Office of the Federal Coordinator for Meteorological Services and Supporting Research
OO-ALC	Ogden Air Logistics Center
OPUP	Open Principal User Processor
PCR	Publication Change Request
PHS&T	Packaging, Handling, Storage, and Transportation
PICA	Primary Inventory Control Activity
PMC	Program Management Committee
PMEL	Precision Measurement Equipment Laboratory
PMRT	Program Management Responsibility Transfer
PPD	Program Plans Division, W/OST1
PSE	Peculiar Support Equipment
PUP	Principal User Processor
RDA	Radar Data Acquisition
ROC	Radar Operations Center
RPG	Radar Product Generator
RPIE	Real Property Installed Equipment
SE	Support Equipment
SEC	Systems Engineering Center, W/OST3
SERD	Support Equipment Recommendation Data
SICA	Secondary Inventory Control Activity
SM&R	Source, Maintenance, and Recoverability
SMRT	Support Management Responsibility Transfer
SMT	AF Special Maintenance Team
SPAWAR	Space and Naval Warfare Systems Command
SREC	System Recommendation and Evaluation Committee
TAC	Technical Advisory Committee
TMDE	Test, Measurement, and Diagnostic Equipment
TMWG	Technical Manual Working Group
TO	Technical Order
USAF	United States Air Force
WARP	Weather and Radar Processor
W/OPS	NWS Office of Operational Systems
W/OPS1	NWS OPS Maintenance, Logistics, and Acquisition Division
W/OPS4	NWS OPS Radar Operations Center
W/OS	NWS Office of Climate, Water, and Weather Services
W/OST	NWS Office of Science and Technology

W/OST1	NWS OST Program Plans Division
W/OST2	NWS OST Meteorological Development Laboratory
W/OST3	NWS OST Systems Engineering Center
WSR-88D	Weather Surveillance Radar - 1988 Doppler

APPENDIX B

TO

WSR-88D INTEGRATED LOGISTICS SUPPORT PLAN

MEMORANDUM OF UNDERSTANDING

Among the

DOC, DOD, And DOT

for

Joint Interagency Integrated Support of the

Next Generation Weather Radar Program's WSR-88D

Rev 7.3
5 March 2001
Supersedes Rev 7.2
01 June 1998

MEMORANDUM OF UNDERSTANDING

Among the
Department of Commerce
Department of Defense
and the
Department of Transportation
for
Joint Interagency Integrated Support
of the
Next Generation Weather Radar Program's WSR-88D

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WHEREAS, each of the signatories will be responsible for operation and support of a number of WSR-88D equipment, and

WHEREAS, detailed plans are in place to implement this Memorandum of Understanding, and

WHEREAS, authority is granted for this agreement under the provisions of the Economy Act of 1932, as amended, 31 U.S.C. 1535, 1536 (1982) (formerly 31 U.S.C. 686)

NOW THEREFORE, the parties mutually agree to the following terms and conditions:

1. Purpose

To provide the basic policy and guidance for implementing and accomplishing joint interagency program management and integrated support of the WSR-88D system. Integrated support is herein defined as all aspects of logistics support, field (organizational) maintenance, depot maintenance, technical orders and manuals, training support, and configuration management.

2. Policy

The WSR-88D is vital to the operations of each Department. Therefore, the WSR-88D operations and support system must satisfy the common needs of all three Departments. This concept of joint operation and support requires considerable cooperation among the three Departments and necessitates joint goals and decisions.

- a. The Departments of Commerce, Defense, and Transportation will jointly operate and support the WSR-88D system. While this MOU provides the support policies, the basic policies for operation of the network to meet the common needs of the WSR-88D agencies are contained in the MOA among DOC, DOT and DOD for Interagency Operation of the WSR-88D.
- b. The NEXRAD Program Management Committee (PMC), as established by the NEXRAD Program Council (NPC), has authority to provide overall policy, management guidance, and resource commitments for the NEXRAD Program, and approve those items identified in the NEXRAD Joint Program Development Plan as higher authority decisions. The NPC though officially retired in will act as arbiter on all non-consensus decisions referred by the Chairman of the Program Management Committee (PMC) at the request of any PMC member. The PMC membership will consist of the signatories of this document, their representative, or their successor. As of November, 1997, the NPC has retired as an active body and delegated its responsibilities to the PMC. The NPC Charter remains in

effect, and in extenuating circumstances the NPC may reassemble.

- c. The PMC is a tri-agency committee formed prior to the Operational Phase. The primary role of committee members is to make higher authority decisions for each agency throughout the operational life of the WSR-88D equipment. The NPC has delegated its authority to the PMC to act as the final arbiter on major policy and financial issues. The PMC provides tri-agency guidance and management oversight of the WSR-88D system during its operational life cycle. The PMC will provide decisions involving changes and modifications, and new work which requires authority to expend significant ROC resources. The PMC will serve as a higher level Configuration Control Board for proposed changes that affect the WSR-88D system configurations operationally deployed within the three agencies.
- d. Voting Agency Representatives of the PMC are: Director of the Office of Science and Technology, NWS; Director of Plans and Programs, Headquarters Air Force Weather Agency (AFWA); Program Director for Aviation Weather, Headquarters FAA.

The PMC is chaired by the Director of the Office of Operational Systems, NWS as a non-voting member. Non-voting PMC operational support representation is provided by the Chief of ROC as the WSR-88D Integration Program Manager (IPM). NEXRAD Product Improvement (NPI) representation is provided by the Chief of the Programs and Plans Division of the NWS Office of Science and Technology, who as a non-voting member of the PMC is the WSR-88D NPI Manager.
- e. W/OPS will provide full life cycle support as the management lead of the tri-agency ROC and will maintain the tri-agency management, staffing, and program related responsibilities established by the NPC and PMC. W/OPS1 will provide depot repair and supply support as Primary Inventory Control Activity (PICA) for the WSR-88D system using the National Reconditioning Center (NRC) and the NOAA Logistics Supply Center (NLSC) facilities in Kansas, City, Missouri.

3. Responsibilities

To implement the policies in section 2 above and to provide a cost effective life cycle support environment for the WSR-88D, each Department will have the following general support responsibilities:

- a. Department of Commerce

National Weather Service (NWS)

Provide the NWS member to the PMC. Provide a separate PMC Chairperson and Executive Secretary. Ensure field level maintenance is

performed on all NWS owned WSR-88D equipment. In addition, NWS will ensure that all WSR-88D LRUs or other items which are coded as repairable are recovered and returned to NRC in accordance with the WSR-88D Supply Support Plan.

- (1) W/OPS will be the management headquarters for WSR-88D and will assume the management authority for the ROC to include all tasks listed in paragraph 3.a.(2). W/OPS will ensure the ROC is responsive to the requirements of the PMC. W/OPS will ensure that sufficient staff, equipment, and facilities are provided at NRC and NLSC to provide fully responsive depot repair and supply support for the tri-agency WSR-88D systems. The W/OPS14 will establish the PICA within the NWS to support all three Departments in accordance with the WSR-88D Supply Support Plan. The W/OPS16 will provide LRU return and credit procedures, and will also provide depot repair support at the NRC in accordance with the WSR-88D Depot Repair Support Plan.
- (2) The ROC support includes the operational and organizational maintenance assistance support of all WSR-88D units operated and maintained by the signatories of this MOU. Specifically, the ROC will perform software maintenance, sustaining engineering development, analyses of day-to-day operations and maintenance, and provide life cycle support. The ROC will maintain and manage all the engineering technical documentation, technical manuals, baseline configurations, modifications and retrofit of the WSR-88D system. The ROC will schedule, operate, and maintain the ROC's WSR-88D unit and software maintenance equipment and provide laboratories, facilities, personnel, and services to resolve field (organizational) operations and maintenance difficulties associated with the WSR-88D System. The ROC will be equipped and provide for development, test, and evaluation of new or substantially improved WSR-88D equipment, software, techniques, and procedures.

b. Department of Defense (DOD)

- (1) Air Force Weather Agency

Provide DOD member to the PMC.

- (2) Air Force Participating Commands

Participating Commands receiving operational systems, ensure organizational-level maintenance is planned for all Air Force-owned

WSR-88D equipment. Provide the necessary planning and direction to ensure all agency owned WSR-88D LRUs which are coded repairable are recovered and returned in accordance with the WSR-88D Supply Support Plan.

(3) Air Force Communications Agency (AFCA)

Coordinate policy and procedures with inputs from participating commands when tasked or required. Assist in the preparation of program plans and documentation.

(4) Air Force Material Command (AFMC)

Establish OO-ALC as a Secondary Inventory Control Activity (SICA) for the Air Force. Provide logistics support and consulting assistance to the ROC.

(5) Space and Naval Warfare Systems Command (SPAWAR)

Ensure the establishment of Navy Inventory Control Point (NAVICP), Mechanicsburg as the Navy Secondary Inventory Control Activity (SICA). Ensure organizational level maintenance is performed on all Navy owned WSR-88D equipment. In addition, ensure that all agency owned WSR-88D LRUs or other items which are coded as repairable are recovered and returned to the NRC in accordance with the WSR-88D Supply Support Plan.

c. Department of Transportation

Federal Aviation Administration (FAA).

Provide the DOT member to the PMC. Establish the FAA as a Secondary Inventory Control Activity (SICA). Ensure field (organizational) level maintenance is performed on all FAA owned WSR-88D equipment. In addition, ensure that all agency owned WSR-88D LRUs or other items which are coded as repairable are recovered and returned to the NRC in accordance with the WSR-88D Supply Support Plan.

4. Resources and Funding

- a. Due to the joint nature of WSR-88D support, DOC, DOD, and DOT will jointly staff and fund the ROC. The staffing and funding will be documented in the Interagency Cost Sharing MOA, and as a goal, will be representative of the percentage of WSR-88D units procured by each agency.

- b. Air Force, Navy and FAA will provide reimbursement to the NWS for depot repair and supply support. Reimbursement policies and procedures are addressed in the WSR-88D Supply Support Plan.

5. Effective Date and Periodic Review

The policy and guidance contained herein is effective upon approval of the signatories. Update of this MOU will be the responsibility of the ROC as requested by the PMC. This MOU will be reviewed at least every 2 years to determine whether it should be continued, modified or terminated. Any of the three agencies may submit MOU modifications for incorporation and implementation prior to the scheduled review cycle. The latest date of the review or modification constitutes the new effective date unless some later date is specified.

6. Termination

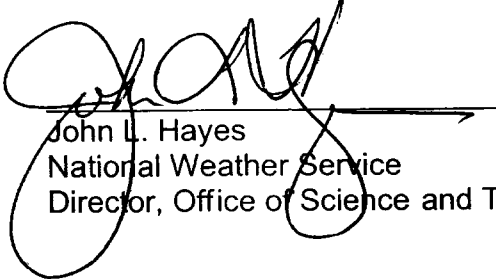
Termination for cause of program completion will require a terminating review to consider the elements negotiated in this MOU and any subsequent interagency MOAs. The terminating agency will notify the other agencies, in writing, of the required termination, within a time frame to permit orderly transfer of support, and not less than 3 years in advance of the termination.

Revision 7.3 Approval:

Prepared by: WSR-88D Radar Operations Center, Program Support Branch
Submitted by: James D. Belville, WSR-88D Integration Program Manager

Approved:


For the Department of Commerce:



John L. Hayes
National Weather Service
Director, Office of Science and Technology

5/2/02
Date

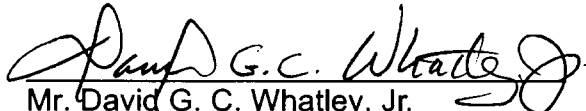
For the Department of Defense:



Nathan Feldman, Col USAF
Headquarters, Air Force Weather Agency
Director of Systems

10 APR 02
Date


For the Department of Transportation:



Mr. David G. C. Whatley, Jr.
Program Director for Aviation Weather
Headquarters/Federal Aviation Administration

3/28/02
Date

For the WSR-88D Program:



Mr. John McNulty
Director, Office of Operational Systems
National Weather Service
Chairman, WSR-88D Program Management Committee

5/31/02
Date

APPENDIX C
TO
WSR-88D INTEGRATED LOGISTICS SUPPORT PLAN
WSR-88D SUPPLY SUPPORT PLAN

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1.0 Purpose

The purpose of this supplementing plan is to identify the organizational relationships and responsibilities among the supply support organizations that support the fielded of Weather Surveillance Radar-88D (WSR-88D) systems and equipment. This plan identifies activities to be accomplished and references how, when and by whom they will be accomplished. This plan addresses the action to be taken by the National Weather Service (NWS), Office of Operational Systems, Department of Defense (DOD), and Department of Transportation, Federal Aviation Administration (FAA) and includes their subordinate organizations in the establishment and maintenance of the WSR-88D supply support system. The supply support provided to agencies external to the National Weather Service is through interagency supply support agreements.

2.0 Scope

This plan will be used during the operational phase and includes the improvements and upgrades to fielded systems and equipment that comprises the WSR-88D. This plan provides a further amplification of interagency supply support as required by the WSR-88D Memorandum of Understanding (MOU) for Joint Interagency Integrated Support, approved November, 1990.

The MOU states that NWS will provide supply related logistics support for WSR-88D to all participating agencies in the capacity of a Primary Inventory Control Activity (PICA). Stock item initial provisioning, follow-on provisioning, replenishment, and supply coordination on behalf of WSR-88D users is accomplished at NWS Headquarters in Silver Spring, Maryland.

In order to deal effectively with the many aspects of supply support in the integrated logistics support environment, this plan has been organized and updated to discuss the progress made to date and plans for WSR-88D supply support.

3.0 Background

In November 1992, the supply support function for the WSR-88D transitioned from the interim support contract with Lockheed Martin to full Government support by the NWS through LRU and repair parts stocked at the NLSC warehouse. The transition commenced with the delivery of provisioned stock items to NLSC in early FY 1992, and was completed with the termination of the contractor interim support contract line items.

Initial Operational support (IOC) for the US Air Force (USAF) supply support was achieved October 1, 1993 by implementation of MILSTRIP requisitioning for all USAF sites. The Federal Aviation Administration and US Navy achieved IOC October 1, 1995 with their implementing full FEDSTRIP and MILSTRIP requisitioning for their WSR-88D sites. Billing for NWS supplied material to external customers has been operational since 1993 for the USAF and since 1995 for the FAA and US Navy.

Warehousing of stock items including storage, requisition processing, packing, shipping, receiving, and physical inventory control are accomplished at the National Oceanic and Atmospheric Administration's National Logistics Support Center (NLSC) in Kansas City, Missouri, as directed and funded by NWS Office of Operational Systems, Maintenance Logistics and Acquisition Division, Logistics Branch (W/OPS14).

4.0 Reference Documents

- a. WSR-88D Memorandum of Understanding (MOU) for Joint Interagency Integrated Support, approved November, 1990.
- b. WSR-88D Memorandum of Understanding (MOU) among The Federal Aviation Administration, Monroney Aeronautical Center and the National Weather Service, July 1995.
- c. Wholesale Inventory Management and Logistics Support of Multi-used Non-consumable Items, AFMCR 400-21, NAVMATINST 4790.23B, MCO P4410.22B, dated February 25, 1982.
- d. Joint Regulation Governing the Use and Application of Uniform Source, Maintenance, and Recoverability Codes, AFR 66-45, OPNAVINST 4410.2, MCO 4400.120, U.S. GPO: 1985 0-460-975/20059.
- e. Defense Integrated Material Management Manual for Consumable Items, DOD 4140.26M, May 1997.
- f. Defense Integrated Data System (DIDS. Federal Logistics Information System (FLIS)Manual DOD 4100.39M, July 1997
- g. Military Standard Requisitioning and Issue Procedures (MILSTRIP) Manual, DOD 4000.25-1-M, dated May 1987, and changes thereto.
- h. Military Standard Billing System (MILSBILLS) Manual, DOD 4000.25-7-M, dated January 1985, and changes thereto.
- i. National Weather Service Operations Manual, Chapter A-31 Integrated Logistics Support, November 5, 1997

5.0 Acronyms

CASC	-	National Oceanic and Atmospheric Administration's Central Administrative Support Center, Kansas City, Missouri
CDRL	-	Contract Data Requirements List
CLS	-	Consolidated Logistics System
DAASO	-	Defense Automatic Addressing System Office
DCN	-	Design Change Notice
DLIS	-	Defense Logistics Information Services
DODAAC	-	Department of Defense Activity Address Code
EOQ	-	Economic Order Quantity
LSA	-	Logistics Support Analysis
LSAR	-	Logistics Support Analysis Record
MILSTRIP	-	Military Standard Requisitioning and Issue Procedures
MOE Rule	-	Major Organizational Entity Rule
MOU	-	Memorandum of Understanding
NEXRAD	-	Next Generation Weather Radar
NIMSC	-	Nonconsumable Item Material Support Code
NLSC	-	National Logistics Support Center
NRC	-	National Reconditioning Center
NSN	-	National Stock Number
NWS	-	National Weather Service
PCA	-	Physical Configuration Audit
PICA	-	Primary Inventory Control Activity
PTD	-	Provisioning Technical Documentation
PUP	-	Principal User Processor
RDA	-	Radar Data Acquisition
RIC	-	Routing Identifier Code
RPG	-	Radar Product Generation
SE	-	Support Equipment
SERD	-	Support Equipment Recommendation Data
SICA	-	Secondary Inventory Control Activity
SMR	-	Source, Maintenance, and Recoverability Code
SPTD	-	Supplementary Provisioning Technical Documentation
SSR	-	Supply Support Request
TIR	-	Total Item Record
USAF	-	United States Air Force
USN	-	United States Navy
WSR-88D	-	Weather Surveillance Radar-88D

6.0 Organizational Responsibilities for WSR-88D Operational Supply Support

During the initial ILS planning for the WSR-88D, an integrated tri-agency team approach was developed to develop the WSR-88D supply support. To accomplish this one provisioning specialist and one equipment specialist or inventory manager from each

agency was designated to coordinate the unique supply requirements for their agency to the overall supply support system. This team management approach has been extended to the management of each agency's operational phase supply support. Outlined below are the various responsibilities of the tri-agency team participants.

6.1 NWS Responsibilities - Primary Inventory Control Activity (PICA)

As a result of the WSR-88D MOU, NWS Logistics Branch became the PICA for the WSR-88D. As an Integrated Material Manager the Logistics Branch is responsible for and will provide the following functions for WSR-88D Supply Support:

- a. Budget and fund for PICA repair reprourement contracts.
- b. Perform cataloging activities for NWS managed items.
- c. Contract for reprourement of repair parts and repairable end items.
- d. Provide customer service activities for customers external to the NWS.
- e. Make disposal decisions for items no longer required by the WSR-88D supply system.
- f. Provide tri-agency coordination management of on going supply management decisions, and issues of interest to the tri-agencies through the Tri-Agency WSR-88D Logistics Working Group.
- g. Provide provisioning for new items being introduced into the WSR-88D system and coordinate all agency related provisioning activities.
- h. Provide requisitioning processing for tri-agency requisitions.
- i. Coordinate all agency related provisioning activities.

6.2 Department of Defense

6.2.1 US Air Force

- a. Provide coordination and management of Department of Defense supply support requirements, funding, and lead service planning, and insuring that the proper supply representatives to all meetings and program activities where supply support issues are discussed. Provide SICA MILSTRIP support for USAF owned WSR-88D equipment.
- b. Management activities include engineering change proposal coordination, coordination of the activities of subordinate USAF commands involved in or

providers of supply support.

- c. Provide Secondary Item management support.

6.2.2 US Navy

- a. Provide coordination and management of Department of Navy supply support requirements, funding, and service planning, and insuring that the proper supply representatives to all meetings and program activities where supply support issues are discussed. Provide SICA FEDSTRIP support for US Navy owned WSR-88D equipment.
- b. Management activities include engineering change proposal evaluation coordination, coordination of the activities of subordinate US Navy commands who are involved in or provide supply support.
- c. Provide Secondary Item management support.

6.3 Federal Aviation Administration, Monroney Aeronautical Center

- a. Provide coordination and management of supply support requirements, funding, and agency planning, and insuring that the proper supply representatives attend all meetings and program activities where supply support issues are discussed. Provide SICA FEDSTRIP support for FAA owned WSR-88D equipment.
- b. Management activities include engineering change proposal evaluation coordination, coordination of the activities of field units who are involved in or provide supply support.
- c. Provide Secondary Item management support.

7.0 Operational Supply Support

The WSR-88D operational sites are provided supply support and replenishment from the National Logistics Support Center (NLSC) in Kansas City, Mo. This support process involves a number of definite steps and involves a number of different organizational activities. A summary of the major activities that comprise the supply support systems are discussed in this section.

7.1 Requisitioning Process

Requisitions from all the WSR-88D using agencies are submitted and accepted in accordance with the policies of Military Standard Requisitioning and Issue Procedures (MILSTRIP) Manual, DOD 4000.25-1-M, dated May, 1987. Both electronic and manual requisitions prescribed by the MILSTRIP Manual may be used, however the use of

manual requisitions is restricted to emergency situation where the normal electronic transmission system has failed.

NWS activities order directly from the NLSC using the procedures and policies listed in part O of Engineering Hand Book 1 (EHB-1);

FAA sites order through the FAA Monroney Aeronautical Center using standard FAA operating procedure.

Department of Defense sites order through their respective SICAs using standard DOD operating procedures as follows:

DOD supply support for WSR-88D is provided by three sources. The correct source of supply can be found in the D043, Master Item Identification Database, or Fed-Log, or the Standard base Supply System (SBSS), if the item record is loaded.

1. G13, National Weather Service (NWS)
Submit all requisitions through the SBSS. This includes MICAP requisitions. G13's system is completely automated and they will not accept requisitions over the phone. All customers can utilize the NWS CLS "read only" terminal connection at internet address <http://www.casc.noaa.gov/nlsc> (<http://206.229.210.157/>) to inquire about stock availability and the status of requisitions. If no status is available after 24 hours, contact your Major Command (MAJCOM) listed below.
2. FGZ, Ogden Air Logistics Center (OO-ALC)
Due to funding FGZ must act as the Air Force Inventory Control Point even though they do not stock any assets. Requisitions must flow through OO-ALC in order to be funded. Once FGZ receives your requisition and funds have been allocated, the requisition is passed (BM) to G13. In reality, G13 actually stocks, stores, and issues the assets. Follow the requisition instructions above for G13 to requisition parts.
3. N35, NAVICP, Mechanicsburg
Navy and Marine Corps organizations will follow standard MILSTRIP procedures to requisition assets. All customers can utilize the NWS CLS "read only" terminal connection at internet address <http://www.casc.noaa.gov/nlsc> (<http://206.229.210.157/>) to inquire about stock availability and the status of requisitions.
4. DLA, Defense Logistics Agency (S9C, S9E, S9G, or S9I)
MICAP requisitions can be submitted through the Defense

Emergency Supply Expert System (DESEX). All other DLA requisitions can be done through the SBSS. Contact DESEX to retrieve status.

MAJCOM POCs (Ask for Ground Communications Manager)

ACC/LGSSM	DSN 575-0093
AETC/LGSW	DSN 487-5107
AFMC/LGSW	DSN 787-7769
AFSPC/LGSW	DSN 692-2507
AMC/LGSW	DSN 779-3141
PACAF/LGSW	DSN 449-3068 x206

OO-ALC POCs

OOALC/LHW	DSN 777-5601 x333	IPT Leader
OOALC/LHW	DSN 777-5987	Item Manager
OOALC/LHW	DSN 585-2194	Equipment Specialist
OOALC/LHW	DSN 777-4239	Equipment Specialist

OOALC/MICAP

CONUS	1-888-330-5482 (Toll Free)
International	DSN 777-3756
E-Mail	OO-ALC.LA.CustomerSupport@hill.af.mil
Prime MICAP Customers	DSN 777-4337, 8, 9

Requisitions are transmitted by customers external to the NWS via the Defense Automated Addressing System (DAAS). Data received by DAAS from a WSR-88D user is immediately transmitted to the NWS DODAAC, 136418, Source of Supply G13. Electronic requisitions are received by the NWS from DAAS at Headquarters NWS, Silver Spring, Maryland. After initial requisition validation, and stock availability verification the requisition is transmitted to the NWS Consolidated Logistics System (CLS) computer in Kansas City, Mo. Transmission of the validated requisition is over a dedicated T-1 line. After the stock validation process is completed requisition status is transmitted from the NWS back to the requisitioner via DAAS. This gives the requisitioner notification of the stock availability and the estimated shipping date, or that stock is not on hand and the requisition has been placed in back order status. Incoming requisitions are forwarded to the NLSC for processing once an hour, 24 hours a day, 7 days a week.

When the requisition is received by the NLSC in the CLS computer it is placed in the processing queue that operates on a first in first out basis. Emergency requisitions receive priority over the processing of routine requisitions. During normal duty hours emergency requisitions are processed on a priority basis. Emergency requisitions that

are received after normal duty hours and weekends, are given priority processing through the NLSC after hours call back process. Personnel designated for after hours support are notified via the CLS computers synthesized voice function to come in and fill an emergency requisition. Only requisitions that are coded priority 02 or 03 with a unit justification code (UJC) receive after hours processing.

7.1.1 Modification Kits

Modification kits are stocked at the NLSC. A limited number of these are procured for a particular modification. Modification kits are requisitioned by ROC PGM for free issue and direct shipment to all affected field units. After recession of the authorizing document and deletion of kits from the supply system, funding for the kit material is the responsibility of the specific organization.

7.1.2 Depot Only Items

There are some repair parts that are designated only for use by depot level repair activities. These items will only be issued to authorized depot level repair activities. If a requisition is received from an organization not authorized to perform depot level repair work, it will be rejected.

7.2 Replenishment Process

All of the WSR-88D stock listed items resulting from the provisioning process that are managed by the NWS are stocked, stored, issued and replenished by the NWS. Replenishment is based on demands, and are computed using Economic Order Quantity (EOQ) methodology. Requests for procurement are initiated by NWS Logistics Branch inventory managers when stock falls below the minimum EOQ stockage objective. Contracting for replenishment procurements is performed through the Central Administrative Support Center (CASC) Procurement Office as requested by Logistics Branch on a weekly EOQ computational output cycle. Reprocurements are competitive, except for those stock items which are identified by as proprietary. Non-competitive procurements are supported by sole source justifications.

7.3 Repair/Supply Support Interface

Unserviceable, repairable stock items (condition codes E and F) are returned to the NRC in Kansas City, Mo. Condemned (condition code H) stock depot disposable items are also returned to NRC. All failed, warranted stock items should be returned to NRC, regardless of condition. Warranty tracking is accomplished/coordinated through the NRC.

The Consolidated Logistics System (CLS) provides return credit (less repair cost) for unserviceable stock items (condition codes E and F only) which are received with MILSTRIP Automatic Return, Document Identifier FTA and project code 3AL indicating

a requisition for a replacement item. All other returned stock items will receive no return credit.

7.4 NLSC Warehouse Operation

The NLSC warehouse is located at: 1510 East Bannister Road, Bldg. #1, in Kansas City, Missouri. The warehouse's normal hours of business are 6:30 AM to 4:30 PM Central Time, Monday through Friday. Emergency service for priority requisitions is provided 24 hours per day, 7 days per week.

7.4.1 Summary of the Warehouse Functions

- a. Receiving and receipting stock items;
- b. Warehousing stock items;
- c. Requisition processing and issuing stock items;
- d. Packaging and preservation of stock items;
- e. Shipping of stock items;
- f. Physical inventory of stock items;
- g. Control of accountable, inactive, excess, hazardous material content, shelf-life, and serialized stock items;
- h. Operation of the Consolidated Logistics System.

7.4.2 Requisitions Processing and Turnaround Time Goals

- a. Non-duty hour priority - delivered to carrier within 4 hours of requisition receipt, or in time to meet the first flight out of Kansas City International Airport. The most expedient mode of transportation is selected to the specific requisitioning site. Historically average time for delivery to a conus site from the time of requisition receipt at NLSC is 18 to 24 hours.
- b. Duty-hour priority - delivered to carrier same day as requisition receipt. The most expedient mode of transportation is selected to the specific requisitioning site. Historically average time for delivery to a conus site from the time of requisition receipt at NLSC is 18 to 24 hours.
- c. Duty-hour routine - shipped 2 working days after requisition receipt. Historically average time for delivery to the site from the time of requisition receipt at NLSC is 3 days.

7.5 Prices, Billing and Credits

Each WSR-88D stock item stocked at the NLSC has a standard unit price. This is derived from the current market or production cost of the item at the time the price is established. Standard prices will be subject to, but not limited to, annual review. Revisions to standard prices will be issued in accordance with DOD 4100.39M. The WSR-88D users requisition stock items from the NWS using funded requisitions for both consumable and nonconsumable items in accordance with MILSTRIP/FEDSTRIP procedures. Requisitions will contain appropriate fund and signal codes for subsequent billing/crediting action on both initial stocking requirements and replenishment requisitions.

Billing is based on monthly electronic transfer from W/OPS14 to the NOAA Financial Management System (FIMA) of requisition transactions. Billing and credits for DOD activities is via GSA/Interfund Transfers to DOD treasury appropriation accounts. On September 15, 1989 NOAA/National Weather Service was approved to participate in the MILSBILLS Interfund System through the General Services Administration's Sybac system. This billing/paying process was implemented in November 1993. The approval limits the NWS's seller functions to DOD activities, and to those items for which the NWS is designated as the integrated DOD material manager. Civilian agency customers are billed through the On Line Payment and Accounting (OPAC) process. Accounting information from FIMA is billed or credited through the National Oceanic and Atmospheric Administration, Office of Finance and Administration to the appropriate agency paying office on a quarterly basis.

7.6 Reprocurement Data Management

To the extent that reprocurement data was made available as Supplementary Provisioning Technical Documentation or as engineering drawings from acquisition phase, files of these data are maintained by NWS ROC Configuration Management Team. This reprocurement data is updated as WSR-88D design changes occur and is used for competitive replenishment of stock items. When reprocurement data is proprietary the data is used to support sole-source contracts.

7.7 Design Change/Modification Implementation

The supply support product baselines were established as a result of the WSR-88D Physical Configuration Audits (PCA). Design changes incorporated into the WSR-88D System by Engineering Change Proposals Approval by the tri-agencies include costs associated with the modification of spares, and are funded by the WSR-88D program. These changes are incorporated through planning and implementation by the NWS. For each Class I or Class II Engineering Change Proposal approved by the Configuration Control Board that affects any repairable or consumable stock item of the WSR-88D, a Design Change Notice is submitted to NWS Logistics Branch by the ROC. This requirement assures that the supply system will provide the correct parts for operation

and maintenance of the WSR-88D.

7.8 Cataloging

In short terms, cataloging is the assignment of National Stock Numbers (NSN) to items that are stocked in the supply system. All requisitions use the NSN to identify what is being requisitioned. To establish the NWS as a PICA for cataloging purposes, a System Change Request (SCR) number OF-2712 [ZF-885701], was submitted to DLIS on February 5, 1988. Corrections were made, and the SCR was formally referred to the DOD Integrated Material Management Committee for approval in March 1988. After review by all agencies, the SCR was approved on August 16, 1988, and implemented by DLIS on November 6, 1989. Full implementation of the software changes required by this SCR were completed by DLIS in 1994. This action provided the NWS Major Organizational Entity (MOE) Rules to identify the NWS as both PICA and SICA, and provided Level of Authority (LOA) for both PICA and SICA activities.

A MOE rule is a short hand used by the supply system to identify an operational relationship of buyer/seller, or wholesale/retail activity within the federal supply system. Each stock item sent to DLIS for cataloging receives a MOE rule, as part of the NSN assignment process. Activities other than the cataloging requestor that want to be able to requisition that item, also add their MOE rule after the NSN is assigned. The MOE rules then identify the activities that have registered for support from the PICA for that item. MOE Rules and LOA Assignments for WSR-88D items managed by the NWS are in accordance with SCR OF-2712 (ZF-885701).

All WSR-88D items are assigned NSNs. This is accomplished by the NWS, Logistics Branch in two steps. During the provisioning process all part numbers are screened against the DLIS data base to see if any items had already been assigned a NSN. If a match is found the NSN is added to the NWS data base, if no NSN is found a cataloging action is initiated to obtain a NSN. This was done for all WSR-88D repairable and consumable items. This is a continuous process that is used any time a new item is introduced into the WSR-88D supply system.

Action by an agency to add its MOE rules to an item with an existing NSN is called collaboration. Collaboration is used for Federal Supply Classes which are assigned to specific agencies for Defense Integrated Material Management (IMM). This has been accomplished by NWS, Logistics Branch for WSR-88D items. In cases where the IMM is other than the NWS, action was taken to add all the WSR-88D using agencies SICA MOE Rules by applying the appropriate designations.

Cataloging actions to stock-list are submitted to DLIS by the NWS, Logistics Branch in accordance with the requirements of DOD manual 4100.39M, and also include Catalog Management Data (CMD). The submission of SICA(s) peculiar Catalog Management Data (CMD) is the responsibility of each respective agency. SICA proposed changes to item data, other than SICA CMD are submitted to the PICA for processing to DLIS. All nonconsumables for the WSR-88D for which NSN assignment is requested are

Nonconsumable Item Material Support Coded (NIMSC) into the Total Item Record (TIR) at DLIS in accordance with AFMCR 400-21, Logistics Wholesale Inventory Management and Logistics Support of Multi used Nonconsumable Items. All items are assigned NIMSC 5: Depot Repairable Component (Phase II). This code identifies SICA managed depot repairable components assigned to a PICA in another service. This action permits an organization to submit their supply requirements to the PICA on requisitions, which are funded by a designated point within the SICA. The SICA will also provide item/program data to the PICA to meet to register as a user of the item. This is accomplished by submitting Supply Support Requests (SSR). The IMM, as the item PICA, is required to add this information to the DLIS TIR for the stock-listed items and to assume supply support responsibility for the requestor. DLIS will process add/change/delete actions applicable to the DLIS TIR only when received from a PICA, except for Segment H, CMD, SICA.

7.9 Provisioning

Provisioning is the process of determining the range and quantity of items (i.e., spares and repair parts, special tools, test equipment and support items) required to support and maintain an end item of material for an initial period of service, and during subsequent life cycle phases. The selection of items for supply support was a collaborative effort of the WSR-88D provisioning team. The quantities of each end item required for initial stock were calculated by the NWS, Logistics Branch and procured through the Provisioned Item Order option on the WSR-88D contract. In the case of Integrated Material Managed Items already in the Federal Supply System, Supply Support Requests were initiated by NWS to the IMM in accordance with Chapter 4, DOD Manual 4140-26M. Each WSR-88D nonconsumable stock item which is PICA managed by other agencies other than NWS, will be individually assessed during the provisioning process to determine if transfer of management to NWS management is desirable or appropriate from the currently assigned IMM.

7.9.1 Provisioning Organization

Provisioning contact points have been established in each WSR-88D using agency as follows:

PICA NWS, W/OPS14
SICA FAA, Logistics Center/AML610
SICA AF, OO-ALC/LH
SICA Navy, NAVICP/C5322

7.9.2 Source, Maintenance, and Recoverability (SMR) Coding

SMR codes are used to communicate supply instructions to the various logistics support levels, and to users. These codes are part of the Illustrated Parts Breakdown (IPB) of maintenance technical manuals, The Engineering Handbook 1, Federal Cataloging

Data and various provisioning and supply support documents. A single SMR code is assigned to each item, and is based on the logistics support plans and maintenance concept of the end item, in this case the WSR-88D. The SMR codes provide a "mini" maintenance plan for each item which, when all elements of the SMR code are considered together implements the WSR-88D maintenance concept. The SMR code assigned to each stock item is also a record of technical support decisions that reflect consideration of design, manufacture, application, repair cost, maintenance, and supply practices and capabilities for each stock item and the operational mission of the WSR-88D.

SMR coding for WSR-88D components began with contractor recommendations, and were included as part of the provisioning technical documentation. Assignments of SMR code are in accordance with the Joint Regulation Governing the Use and Application of Uniform Source, Maintenance, and Recoverability Codes, Air Force Regulation (AFR) 66-45. Uniform SMR codes used on the WSR-88D consist of three parts: a two position source code; a two position maintenance code; and a one position recoverability code. A further explanation of the codes is as follows:

- a. Source codes (positions 1 and 2) denote the means by which the stock item is acquired for replenishment purposes, i.e., procured and stocked at NLSC or elsewhere in the Government, locally manufactured, assembled, etc. For the WSR-88D, it was and is mandatory that the source code be constant for all users and applications of a single stock item.
- b. Maintenance codes (positions 3 and 4) denote the level(s) and extent of maintenance performed on an item. Position 3 of the SMR code is referred to as the maintenance code. It indicates the lowest level of maintenance authorized to remove, replace, and use an item. The codes that apply to the WSR-88D stock items in position 3 are: "O" for organizational or field level removal and replacement or "D" for depot level removal and replacement. Assignment of maintenance codes implies that the related logistics support areas such as maintenance training, tools, test equipment, technical documentation, etc., are inclusive of all stock items for a given level of maintenance.

The fourth position of the SMR code is often referred to as the repair code. This position identifies whether an item is repairable or consumable, and if it is repairable, this position of the SMR identifies the lowest maintenance level with the capability to perform repair, i.e., all authorized maintenance actions required to restore the item to serviceable condition. As with position 3, the selection of a repair code implies that all related logistics support areas have been planned and provided to carry out the intent of the SMR code. The codes which will be utilized in the fourth position of the SMR code for the WSR-88D stock items are: "Z" for no repair authorized or not repairable (consumable); "O" for organizational or field level repair; "D" for limited field repair, depot overhaul; and "L" for

specialized repair teams. Teams from the ROC will provide depot repair support for maintenance actions that are beyond the capability of field units.

Positions 3 and 4 of the SMR coding for the WSR-88D stock items will remain constant for all users to simplify management of each stock item.

- c. The fifth position of the SMR denotes which maintenance level is authorized to dispose of an item, and is referred to as the recoverability code. Recoverability codes for the WSR-88D items are: "Z" for nonrepairable or throw away items. Disposal is done by level of maintenance indicated in position 3 of the SMR code; "O" for organizational or field level; "D" for depot level; and "A" which denotes that the item requires special handling, contains hazardous materials, or precious metals and that specific procedures must be followed in its disposal.

Some assumptions were used for the WSR-88D coding: Major WSR-88D end items such as Radar Product Generation (RPG), Radar Data Acquisition (RDA), Principal User Processor (PUP), etc., that will not be stocked, stored, issued or returned to depot for repair, will be source coded "PD" in positions 1 and 2, i.e., procured for initial issue or outfitting and restocked only for subsequent or additional initial issues or outfittings. These items are not subject to automatic replenishment. These items are assigned National Stock Numbers (NSN) for the purpose of property tracking and possible movement of systems during the operational life cycle. There is limited use of source code "XB", i.e., item is not procured or stocked, if not available through salvage requisition. Letter "D" in the third, fourth, or fifth position of the SMR code always denotes National Reconditioning Center (NRC) in Kansas City, Missouri, regardless of the final repair destination or final disposition destination. Letter "O" in the third, fourth or fifth position of the SMR code applies to any organizational activity and/or its geographically associated sites. As an example, non-associated PUPs may be serviced as another piece of equipment at an already existing organizational or field-level unit.

7.9.3 Support Equipment

The determination of the WSR-88D Support Equipment (SE) requirements was done through the Support Equipment Recommendation Data (SERD) process. The Contractor submitted a SERD on items considered necessary for the support of the WSR-88D. The SERD items were classified as being either peculiar (WSR-88D unique) or common. The JSPO, along with input from the user agencies reviewed, modified, and approved or disapproved each item as appropriate. The Equipment selected through the SERD process were then procured. Peculiar SE spare parts support was provisioned by NWS for support of tri-agency used support equipment. Support of common SE is the responsibility of each agency. New items of support equipment are introduced into the supply support system through the SERD process.

7.9.4 Consumable Material

An initial supply of consumable items, such as printer paper, oil, filters, etc., was made into a kit form, and shipped from the NLSC in time to coincide with system delivery at the site. The kits contained an estimated one year supply of consumable items. Replenishment of consumable items at the site is accomplished by requisitioning these supplies from the NLSC in accordance with requisitioning process of each agency.

7.9.5 Design Change Requirements

As the WSR-88D system evolves and modifications are made to the system, each change will be provisioned to provide the necessary supply support for the new hardware, and new items will be procured as stock items. The method of parts selection will be via a LSA 036 Report, a provisioning parts list. The media and format for PTD and selected data elements shall be those available in MIL-STD-1388-2B and as designated in Part II, LSAR Data Selection Sheet, of the contract DD Form 1949-1. SMR coding will be in accordance the SMR coding used in the initial provisioning process.

7.9.6 Provisioned Item Orders

As required the National Weather Service will provide Provisioned Item Order(s) to the designated acquisition agent designated for each change.

7.9.7 Preservation, Packaging, and Packing Requirements

Requirements for preservation, packaging, and packing of spare and repair parts for WSR-88D and WSR-88D support equipment are considered during the provisioning process. Packaging Instruction (SPI) are prepared for all items requiring special packaging. SPIs shall be prepared for all items having Expendability-Recoverability-Repairability Codes (ERRC), C, S, and T. Commercial packaging container criteria as contained in Appendix E of MIL-STD-2073-1 may be used to satisfy SPI requirements.

Those items determined to be Electrostatic Discharge Sensitive (ESDS) as defined by DOD-STD-1686 are identified as such on packaging data submittal.

Usually packaging data is submitted for approval actions as soon as possible after requirements have been identified. This will ensure completion of data approval and allow sufficient packaging lead time prior to the required delivery dates of the items themselves. In no case are items shipped without approved packaging data, unless prior approval has been granted by the PICA.

8.0 Depot Support

The Integrated Logistic Support Plan (ILSP) designates the NWS as Primary Inventory

Control Activity (PICA) for the WSR-88D radar system. As a part of this responsibility, the National Recondition Center (NRC) has been designated as the primary Government repair depot for WSR-88D LRUs designated depot repairable. The WSR-88D ROC has been designated to provide on site support for maintenance actions that are beyond the capability of field units. This encompasses maintenance actions that require special skills, knowledge or more manpower than are available to field sites. Actions such as recovery from lightning strikes, system outages caused by catastrophic failures, and radome repair and maintenance are actions that are ROC supported.

8.1 Supply Support for Depot Only Items

Items that are SMR coded for depot, with a "D" in position 3, are only issued to activities authorized to use or release those items. At present only the Logistics Branch and NRC have this authorization. Items that presently fall into this category are integrated circuits used by the NRC. A number of items have been designated only for use in conjunction with ROC Depot Maintenance Assistance Teams.

APPENDIX D
TO
WSR-88D INTEGRATED LOGISTICS SUPPORT PLAN
DEPOT REPAIR SUPPORT PLAN FOR THE
WEATHER SURVEILLANCE RADAR (DOPPLER) WSR-88D

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1. Purpose

This document establishes a tri-agency support agreement for depot level support of the Weather Surveillance Radar - 1988 Doppler (WSR-88D) and ancillary test equipment. This agreement is established among the Department of Commerce (DOC) National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS), the Department of Transportation (DOT) Federal Aviation Administration (FAA), and the Department of Defense (DOD). This document establishes the NWS's National Reconditioning Center (NRC) as the primary activity for depot level maintenance, reconditioning and quality control of the WSR-88D. The participating agencies agree to this by the terms, procedures and conditions set forth herein. All changes to this plan must be approved by the participating agencies.

2. Background

The Integrated Logistic Support Plan (ILSP) designates the NWS as Primary Inventory Control Activity (PICA) for the WSR-88D radar system. As a part of this responsibility, the NRC has been designated as the primary Government wide repair depot for WSR-88D Line Replaceable Units (LRUs) determined to be depot repairable.

3. NRC Responsibilities

The NRC will provide depot level maintenance, reconditioning and quality control services for all WSR-88D LRUs designated as depot repairable according to the Source, Maintenance, and Recoverability (SMR) code. In addition, the NRC will provide maintenance of depot test equipment, and program data to the ROC.

3.1 Repair

The NRC will perform depot level repair and maintenance of all appropriate WSR-88D LRUs either in house or by contract or a combination of both. Repairs will be performed in accordance with industry standards or better. All repairs will conform to the WSR-88D Technical Requirements. Defective LRUs will be returned to their original operating condition unless an official ROC change notice authorizes a modification. The NRC will notify the ROC if any unauthorized changes are made in the field to an LRU.

3.1.1 Depot Repairable LRUs

The CLS identifies the WSR-88D LRUs specified as depot repairable. All LRUs to be repaired or quality controlled by the NRC must be sent to the NRC for the work to be performed. The NRC will not provide on site repair or trouble shooting except in special cases approved by the site, the ROC and user agencies. These services are provided by the ROC on-site depot corrective maintenance team and the WSR-88D Hotline.

3.1.2 Performance Specifications

Each NRC repaired LRU shall be determined to conform to one of two repair classifications. The vast majority of NRC repairs will be Class 1. Class 1 repairs will be repaired in accordance with NWS Engineering Division (ED) performance specifications. Quality and workmanship will conform to industry standards and will equal or exceed the original manufacturers specifications. Occasionally, due to high demand and/or low supply, LRUs that cannot be returned to Class 1 condition will be repaired and classified as Class 2 LRUs. Class 2 repairs will match all function, form, and fit requirements, but because of physical damage cannot be made to appear new. All class 2 repairs will be so marked. The NRC will consult the ROC before any Class 2 repairs are accomplished.

3.1.3 Repair Source Determination

The NRC will determine the feasibility of in-house versus contract repair for all depot repairable LRUs based on repair costs, manpower availability, turn around times, and program requirements. The NRC shall be responsible for effecting the repair and reconditioning of all depot repairable WSR-88D LRUs using the most economical means available while meeting the quality, quantity and timeliness criteria.

3.1.3.1 Contract Repaired Items.

For LRUs to be repaired by contract, the NRC will be responsible for preparing requests for quote and serving as the Contracting Officers Technical Representative (COTR). Preparation of requests for quotation for contract repairs will be performed using NWS performance specifications and turn around time requirements. The NRC personnel will serve as COTR for all repair contracts associated with depot repair of WSR-88D LRUs.

3.1.3.2 In-House Repaired LRUs

The NRC will be responsible for developing test procedures and techniques for in-house repairs. This includes developing bench test procedures, designing and building specialized test fixtures and modifying ATE hardware and software as appropriate.

3.1.4 Beyond Economical Repair (BER) LRUs

Based on inspection and troubleshooting of an LRU, the NRC may designate an LRU as BER. The designation will be based on the cost of a new item against the cost of repairing the defective LRU as well as the availability of new replacement items.

3.1.5 Parts Substitution

The NRC will coordinate any part substitutions with the ROC. Substitute parts may be needed to replace hard-to-find parts or to replace an expensive part with a less expensive but functionally identical part. All part substitutions will be coordinated with the ROC prior to implementation.

3.1.6 Equipment Modifications

Although most modifications entail kits installed by agency field personnel, authorized equipment modifications may be performed at the NRC during the repair process (attrition retrofit) or as a special project. NRC is responsible for incorporation of all modifications into their WSR-88D systems and any affected spare parts in stock at the NLSC. NRC costs associated with modifications will be recouped through modification program funding. ROC PGM will be responsible for providing the necessary modification kits to the NRC for implementation. If, in the course of repair, NRC personnel identify a modification to the equipment that would benefit the WSR-88D program either through decreased maintenance costs or improved system performance, a suggestion for implementation will be submitted directly to the ROC, as a Configuration Change Request, for consideration by the WSR-88D configuration control board.

3.2 Quality Control

NRC Quality Control Test Procedures vary according to the item classification. Repaired LRUs are 100 percent inspected. New LRUs are normally sampled, but may be 100% inspected based on item type, history, or quantity. Non-repairable items will be sampled. Sample quantities are determined by type of test required and type of item, for example, destructively tested items will have an extremely small sample. Repaired LRUs found to be out of specification will be referred to the repair source (in-house or vendor) for rework or final disposition. New items found defective will be referred to the supplier for correction, replacement or other disposition. Individually tested and accepted items will receive a Quality Control Tag. Items that are sample tested will be given Quality Control acceptance by lot. The NRC will notify the ROC of non-routine problems with quality of new or repaired stock items. NRC Quality Control will ensure that all new and repaired WSR-88D LRUs meet original manufactures specifications and also meets the following criteria:

- a. New, repaired and/or reconditioned items will perform their designed function when installed in field equipment.
- b. Reconditioned LRUs will be in like new condition or marked as Class II repair.
- c. New, repaired and/or reconditioned items will contain all authorized modifications and all unauthorized modifications will be removed.
- d. New, repaired and/or reconditioned items will be clean and have no damaged parts.

3.2.1 New Stock

All new stock to be warehoused at NLSC will be quality control inspected by the NRC in

accordance with acceptable standards and practices. This includes repairable as well as disposable items.

3.2.2 Repaired or Reconditioned Stock

All stock items repaired or reconditioned by the NRC either by contract or in-house will be quality control inspected by the NRC prior to transferring the item to the NLSC inventory. In addition, all contractor repaired items that qualify as Class II will be so marked by the NRC.

3.2.3 Received Defective

Items returned to the depot as received defective will be examined to determine the cause of the failure. If the problem lies outside the depot, the ROC will be notified for corrective action. The NRC will document each occurrence of received defective that are found not to be defective and will coordinate with the ROC for possible investigation (e.g., a diagnostic may be marginal, or not operating as intended). Returned Defective LRUs will be credited at the issue cost.

3.3 NRC Logistics

The NRC will receive and process all defective WSR-88D LRUs and NWS owned ancillary test equipment.

3.3.1 Return Form (H14)

NWS users will use the pre-printed H14 paper form to return an LRU for depot repair. Items received at the NRC will be checked against the H14.

3.3.2 Defective WSR-88D LRU Accompanying Documentation

For the DOD and DOT participants, the pre-printed H-14 form is the preferable form to return with each repairable item. For those cases where this is not available, each defective WSR-88D LRUs sent to the NRC for repair by any participating agency shall be accompanied by appropriate documentation containing, as a minimum, the following information:

- a. Organization (ORG) Code (Organization code of the site where the failure occurred).
- b. Task Code (USAF Job Control Number (JCN))
- c. NWS Part Number (NWS Site's Only)
- d. National Stock Number

- e. Serial Number
- f. Document Number (A unique document number printed on the document, NOT the RVC sent with the defective LRU).
- g. Technician's assessment of the LRUs failure

3.3.3 Data Entry

The NRC will record all necessary information on items received for repair into the CLS database. The NRC will make inquiries to sites to clarify apparent information discrepancies.

3.3.4 NRC Repair Cost

Before historical repair cost data are available on WSR-88D LRUs, all depot repairs will be charged at 35 percent of acquisition cost. After in house and contract repair cost have been established, depot repairs will be charged at a periodically agreed-to rate, currently 110 percent of NRC repair cost. This costing method will provide for the repair and maintenance of the NRC WSR-88D capital equipment. NRC computes actual repair costs and repair leadtimes which are then automatically fed to the CLS product record in an overnight transfer.

3.4 Program Data

The NRC will provide the ROC with information on repair costs, repair turnaround times, number of repairs performed, received defective rate, actual failure and repair data, and cost avoidance. The ROC may disseminate this information to user agencies. Restrictions may apply to the dissemination of repair cost information when it is deemed procurement sensitive.

3.5 Test Equipment Calibration

The NRC is responsible for and will maintain the calibration of all test equipment used in the course of depot repair of any WSR-88D LRU. Calibration will be preformed at regular intervals, and will be in accordance with the National Institute of Standards and Technology (NIST). As a routine part of the NRC repair process for field test equipment, that equipment will also be calibrated to NIST standards. However, user agencies and their field offices are responsible for the calibration of all such equipment in their inventory in accordance with those policies put in place by the individual agencies.

3.6 ATE Maintenance

The NRC will be responsible for maintaining the ATE equipment used in the depot repair of WSR-88D LRU. This includes hardware and software maintenance and

updates as necessary. The ROC will be responsible for providing assistance in the implementation of new or modified hardware and software in the event of a new or modified LRU being introduced into the WSR-88D system.

3.6.1 Hardware

ATE hardware will be maintained by the NRC either in-house or by contract.

3.6.2 Software

NRC personnel will be responsible for implementing all software changes to the ATE, either through in-house efforts or through contract.

3.6.3 ATE Configuration Control (CM)

The NRC will be responsible for maintaining CM on WSR-88D depot ATE.

3.7 Repair Turnaround Times

The NRC will be responsible for repairing items in a timely manner in accordance with Engineering Division guidance. The goal of the NRC is to quickly repair and quality control LRUs in order to minimize back orders.

3.8 Shipping Costs

Shipping costs will be the responsibility of the site and will not be paid by the NRC.

4. Site Responsibilities

The WSR-88D site personnel are responsible for returning defective LRUs to the NRC and for calibration of SE at their sites.

4.1 Return Of Defective Items

The site will ensure that the NRC receives a defective LRU within 30 days of the receipt of a replacement item. All defective items will be accompanied by documentation as described in paragraph 3.3.2. The NRC will issue overdue notices to each site for sites that have not returned their LRUs within the 30 day window.

4.2 Test Equipment Calibration

The NRC will ensure only calibrated test equipment is returned to NLSC for stocking. However, the individual agencies will be responsible for assuring on-site calibration of

all field test equipment drawn from stock.